Modern Railways in Profile Series

No. 2

BRITISH RAILWAY AIR BRAKED STOCK Volume 2

Steel Carriers, Engineers Stock, Timber Carriers & Powder Tanks

Compiled by Tom Smith

CHEONA PUBLICATIONS

Frontispiece. *Warrington, Arpley Yard, 7th October 1998*

Arpley Yard is one of the North of England's main railfreight network hubs. Busy not only with coal and other products for the nearby coal fired power station but also handling steel, oil and chemical traffic from the local industries as well as trunk traffic between Mossend and Bescot Yards. In the view can be seen a mixture of wagons including TTA fuel tanks, a 'MULLET' code YLA, newly overhauled PCA cement wagons, an overhauled Tiphook KPA bogie hooper wagon and in front a PCA starch powder tank, on hire to Cerestar. Not fully visible behind the grey TTA is a 'SHARK' ballast plough van together with other engineers stock.

Title Page. *Langloan, 5th April 1998*

Class 37 No. **37404**, on the Rutherglen to Coatbridge line hauling train reporting No. 6T30 trip working from Deanside Transit Glasgow to Mossend Yard. Deanside Transit Yard is owned and operated by John G.Russell situated in Glasgow near the airport. It handles a variety of traffic incuding paper, coal and whisky, and the now departed 6L80 Deanside to Wisbech 'Dog Food Train'!

Front CoverTop. *Stirling, 8th October 2001*

A large quantity of OTA wagons were also converted from air-braked vans. Wagon No. 200650 started life as a VDA van built in 1976 at Ashford Works to Lot No. 3855. This was converted by EWS during 1998 to design code OT003A.

Front Cover Bottom. *Mossend Yard, 31st March 2001*

'SEACOW' wagon No. 980220 was built at Ashford Works in 1981-82 to design code YG500H. It is all welded construction and fitted with Y27C bogies. It is fitted with a full three part safety canopy.

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Preface.

In this the second volume of Modern Railways in Profile we are publishing a further selection of Air Braked wagons, again in full colour, utilising the superb detailed photography of Tom Smith. Further volumes are in production covering the china clay wagons and oil/chemical tankers, parcel stock and further engineers stock. As new wagons are introduced onto the rail network these will be included in future volumes of this series.

Acknowledgements.

Staff at Peter D. Stirling, Mossend Railhead
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'The Dotor' at www.gbrail.org.uk – apologies for misquoting the URL in Vol.1

Introduction.

As with Volume One in this series the Railfreight scene in Great Britain and indeed throughout Europe (with the ever-increasing Channel Tunnel use) is constantly changing and evolving.

It has seen the development of a varied wagon fleet where new custom built designs can be seen alongside vehicles which have been adapted and modified to suit the commodity carried. Just as cattle wagons and gunpowder vans were designed to suit their loads so the 'Thrall Europa' built BRA/BYA 'Nissan Hut' and the OTA timber carrying wagons are their modern counterparts.

With most of the vacuum braked wagons being either scrapped or relegated to the engineers fleet, and in some cases fitted with air brakes, a need for modern air braked fleet was created.

In order to fill the gap the 'green' trend of recycling has come into its own. As certain traffic flows increased and other markets shrank it has been necessary to supply specific designs to suit. Surpluses of underframes, bodies and components have been re-used and modification of bespoke and custom built wagons.

The demand for cut timber, for example, used both in the paper and chipboard manufacture called for the introduction of a suitable wagon design.

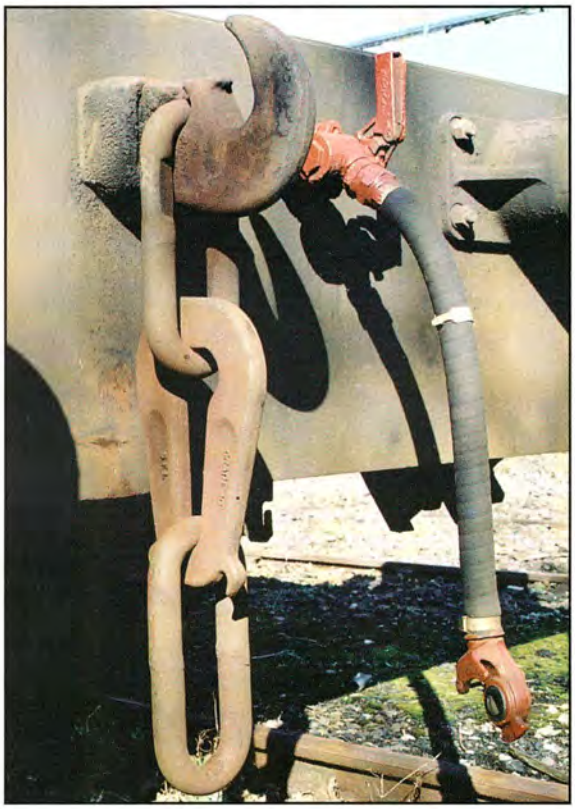
After trials, including bogie designs, the four wheel OTA was produced in fairly large numbers using initially the underframes only from various sources such as steel bodied OCA's. and eventually in the case of redundant VDA vans everything was re-used but the sides and roof. The success of this type has been proven by the numbers still in used today.

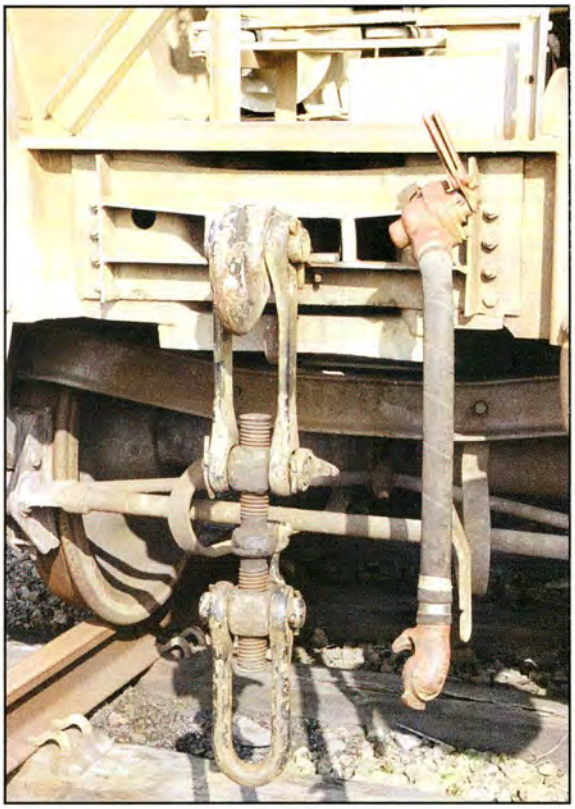
With the decision by some oil companies to withdraw from rail usage and the downturn in carriage of oil, bitumen and petroleum products the surplus tank wagons have seen in the twenty first century in the form of various wagon types built for both the private freight companies and Railtrack companies.

Plate 1. ***Mossend Yard, 24th September 1994***

Just starting out on its long journey south is the inaugural Transrail 'Enterprise' trunk service behind No. 60056. This was the 6M27 Mossend to Willesden service. After the abolition of the BR Speedlink network and the collapse of the short-lived Tiger Freight network it was a welcome sight to see mixed wagonload freight services start up again, a theme which was further expanded when the freight companies were acquired by English, Welsh & Scottish Railways.

As with all wagons it is the detail which makes the difference so as with Vol.1 I have included some detail shots which may also explain some of the terms used.





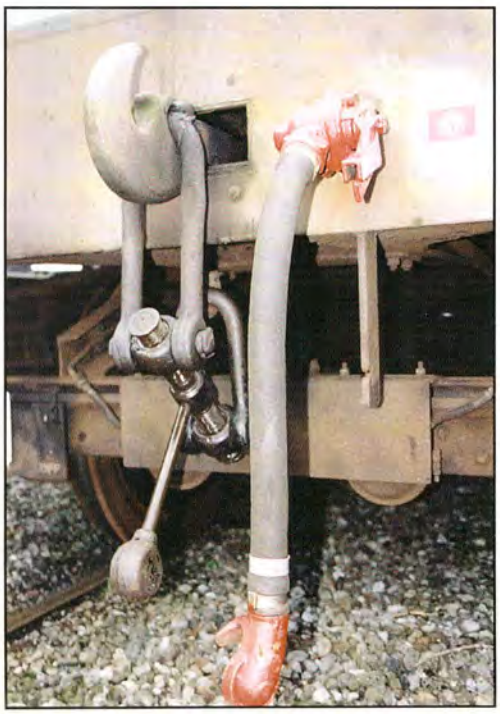


Plate 2. Instanter Coupling. (Above Top Left)

Mossend Yard, 10th March 2003

Seen fitted to a DRSL PFA Barrier wagon is the Instanter coupling and air brake pipe. The centre link of the coupling allows for different coupling distances between wagons. Here the coupling is in the long position.

Plate 3. Screw Link Coupling. (Above Top Right)

Mossend Yard, 20th March 2003

Fitted to a Polybulk wagon is one variation of the screw link coupling. This type of coupling allows for adjustment between the wagons by means of the screw link in the middle of the linkage by way of tightening/ slackening the turn lever. Also again shown is the flexible air pipe. Note the top linkage fitted to the hook is made of two forged side links mounted onto a hardened pin through the hook and retained by cotter pins. The bottom link being a forged loop.

Plate 4. Screw Link Coupling. (Left)

Mossend Yard, 10th March 2003

A second type of screw link coupling but fulfilling the same function as the above unit. This time the two outer links are both forged loops with the top loop fitting in the slot behind the main hooks eye and held in place by the closure of the slot after insertion of the loop. Also noticeable is the hook for holding the coupling when not in use and the guard plate for protecting the air cylinders on the bogie.

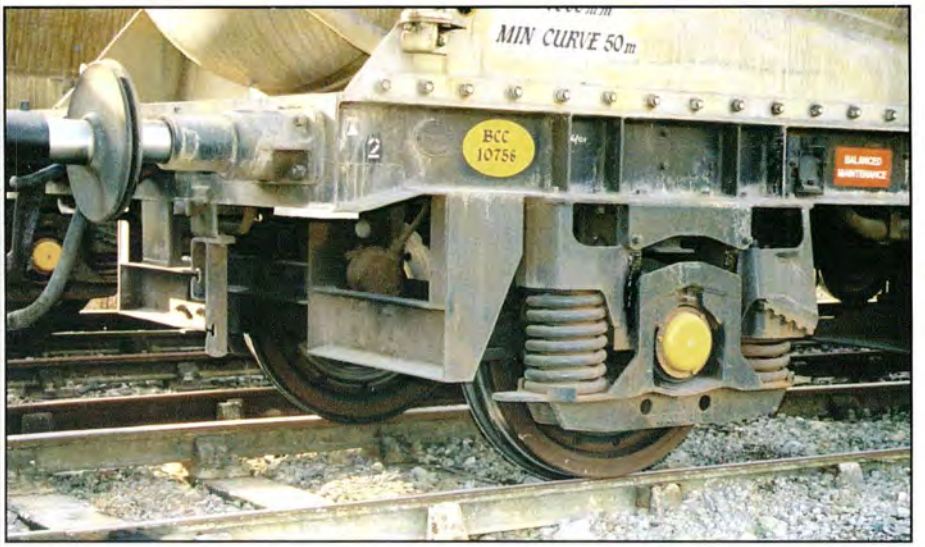
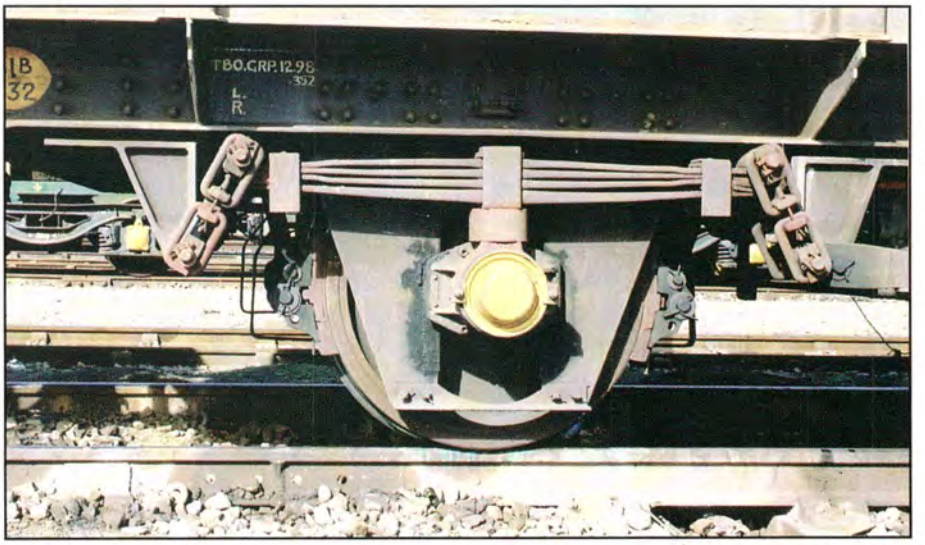


Plate 5. Gloucester Suspension.
Mossend Yard, 10th March 2003
Gloucester Floating Axle suspension unit fitted to BCC PCA 10758 wagon built in 1981 at BREL Ashford Works. The view shows the mounting brackets and disc brakes. This design has seen widespread use on P.O. aggregate hoppers and powder tanks.

Plate 6. Double Link.
Mossend Yard, 10th March 2003
Seen fitted to an ex TTA tank wagon underframe. The Double Link unit is now installed underneath a CAIB PNA and is showing the 8 shoe clasp brakes. A new box body was fitted to the underframe by Marcroft's at Stoke. The wagons were used by Railtrack.



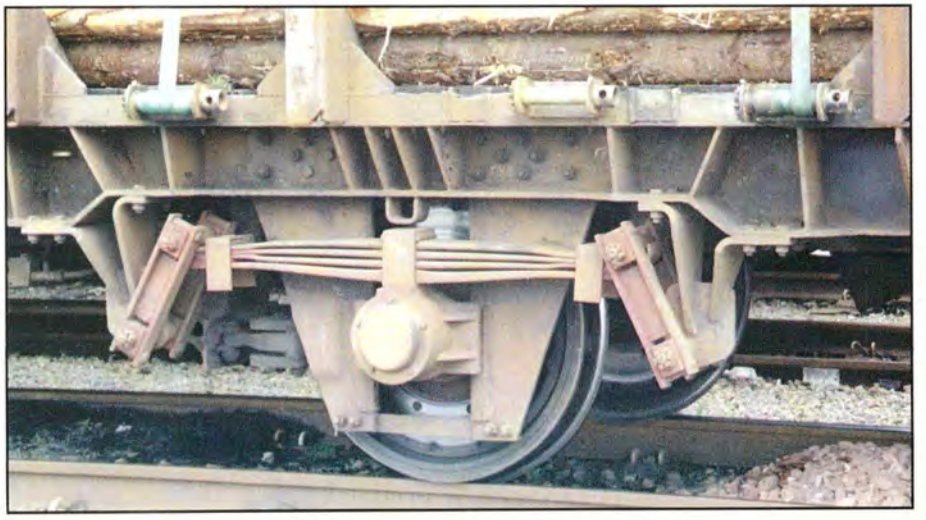


Plate 7. Single Link.
Mossend Yard, 10th March 2003
Fitted to a OTA wagon No.112253, which was an ex OCA vehicle, this view clearly shows the 4 leaf springs and mounts. Also seen is the disc brake caliper to the left hand side of the wheel. Note the strengtheners above the 'W' iron on the solebar.

Plate 8. BSC Friction Pedestal.
Mossend Yard, 23rd March 2003
A view of BSC Friction Pedestal fitted to a PGA wagon No. TCS 14428. It was one of a batch built in 1973 at BREL Shildon to design code PG008A. The view shows in detail the cast construction of the pedestal and the spring arrangments. Like the Gloucester suspension units the BSC units are also used on P.O. freight stock.

The specification for an open box type to replace the previously mentioned vacuum vehicles such as Grampus and its derivatives has resulted in initally the MKA and Limpet types now being superceded by the MTA type for EWS and the green PNA wagon for Railtrack. Built initially on 50T Monobloc tank underframes it has now seen underframes from other wagon types such as cement wagons being utilised. This development together with the Sea Urchin and Sea Horse types using again OBA/OCA and VDA chassis has resulted in a varied and colourful engineer's fleet.

This policy of make do and mend and modify extends throughout the air braked fleet even to the more recent steel carrying types where in some cases the reverse practice has seen the bodies retained and altered and the bogies being replaced with more modern bogie type to both extend the vehicle and increase the running speed with improved brakes.

This cost conscious policy of modifications and improvements has created a twenty first century fleet owing much to the twentieth century.

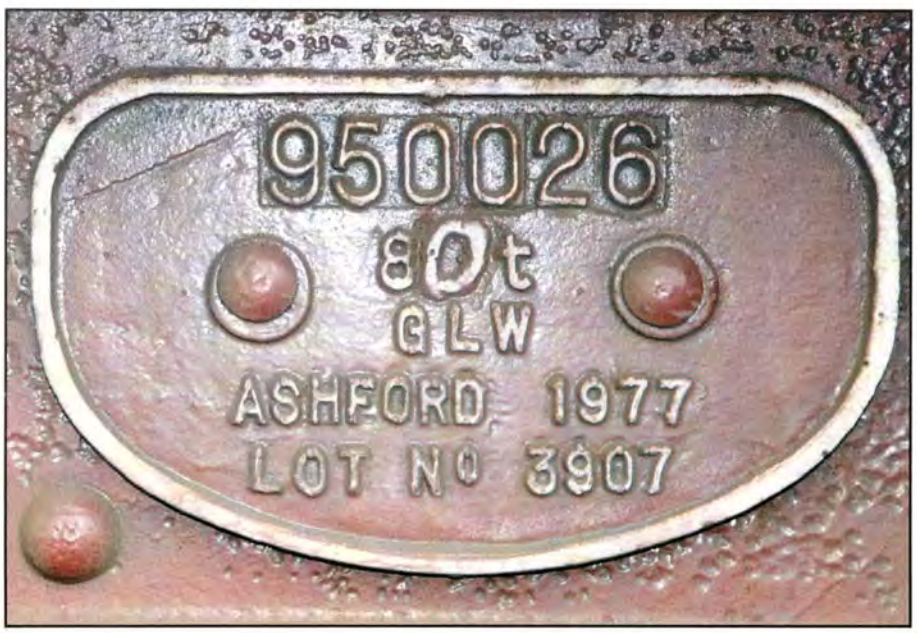


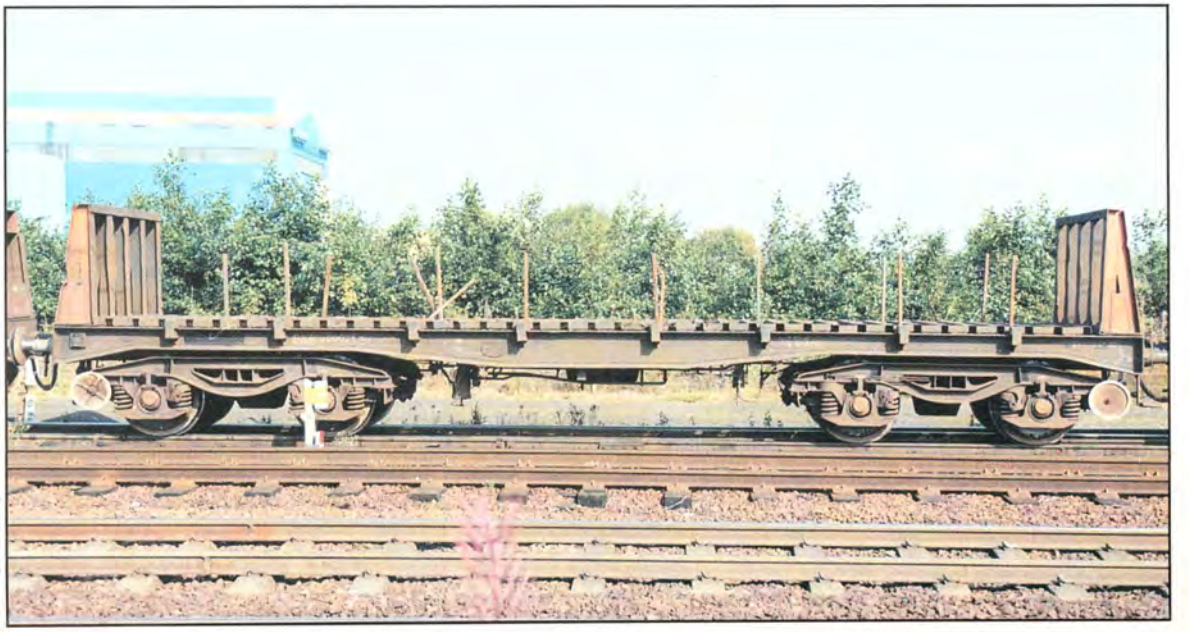
Plate 9. Builders Plate.
Mossend Yard, 10th March 2003
Part of the search into wagons and their history is dependant on information detailed on builders plates such as this one fitted to a BDA bolster wagon. As can be seen it gives the wagon number, weight, where and when built and even the lot number.

Plate 10. BAA Railfreight. ***Motherwell, 6th July 1995***

Wagon No. 900182 was built between 1973 and 1974 to design code BA001B at BR Shildon Works to Lot No. 3805 and was designed for carrying Hot Rolled Steel Coil and Billets having an open mesh floor to aid the cooling of the load. The wagons are fitted with FBT6 bogies with a 6ft $6^{1/2}$ in. wheelbase. They were built with various end designs and both round and oval buffers. At the time of the photograph the wagon was employed on the Lackenby to Dalzell slab train working and was still carrying its Railfreight red livery. Some time in the last few years it has been re-coded to BA001F.

Plate 11. BAA Railfreight (Ex BAB). ***Dalzell, 2nd August 1997***

Wagon No. 900021 is from Lot No.3792 built at BR Ashford Works to the design code BA001A but having different ends fitted to it being higher and having a full length channel section along the top. Again this wagon has had modifications to the bolsters and been re-coded to BA001D.



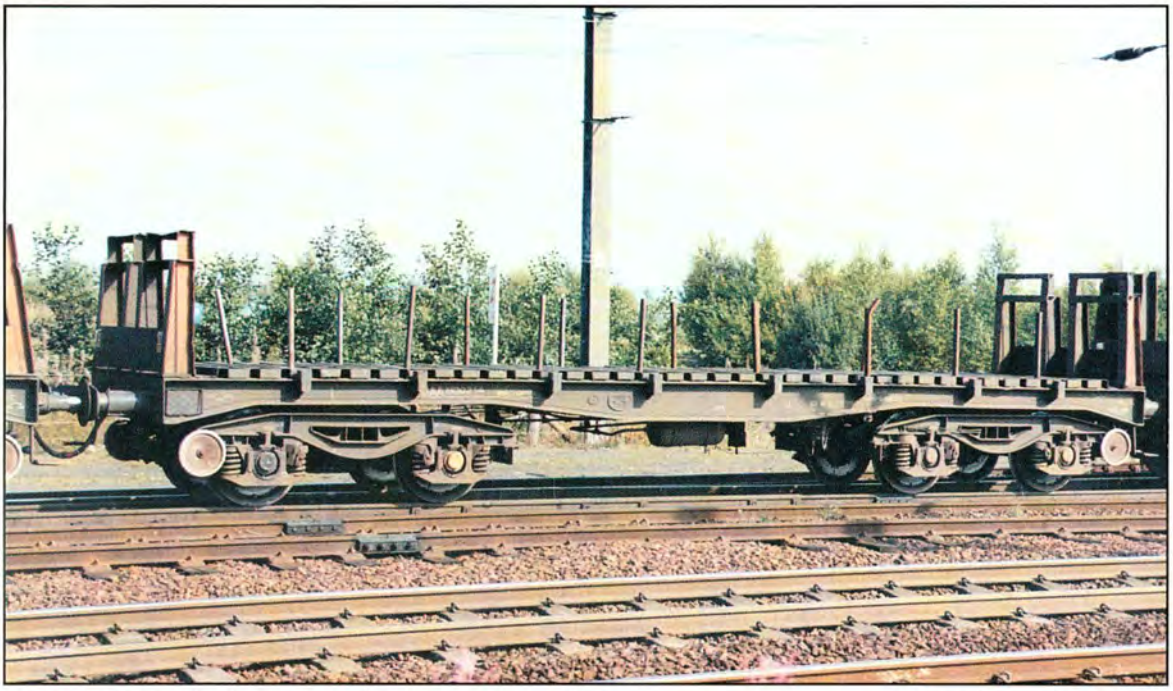


Plate 12. BAA Railfreight. ***Dalzell, 2nd August 1997***

Built in 1975 at BR Ashford Works to Lot No. 3858 design code BA001C, wagon No. 900214, has again slight differences to the other wagons of this class. Notable are the oval buffers and the different wagon ends.

Plate 13. BAA EWS. ***Dalzell, 1st October 2001***

Wagon No. 900197 was one of 74 built at BR Shildon Works in 1973 to Lot No. 3805 having design code BA001B. Again it has different style of ends. It is seen here in the colours of EWS maroon and gold lettering. Now design code BA001F. Note despite obvious local public opinion Ravenscraig closed in the early 1990's.

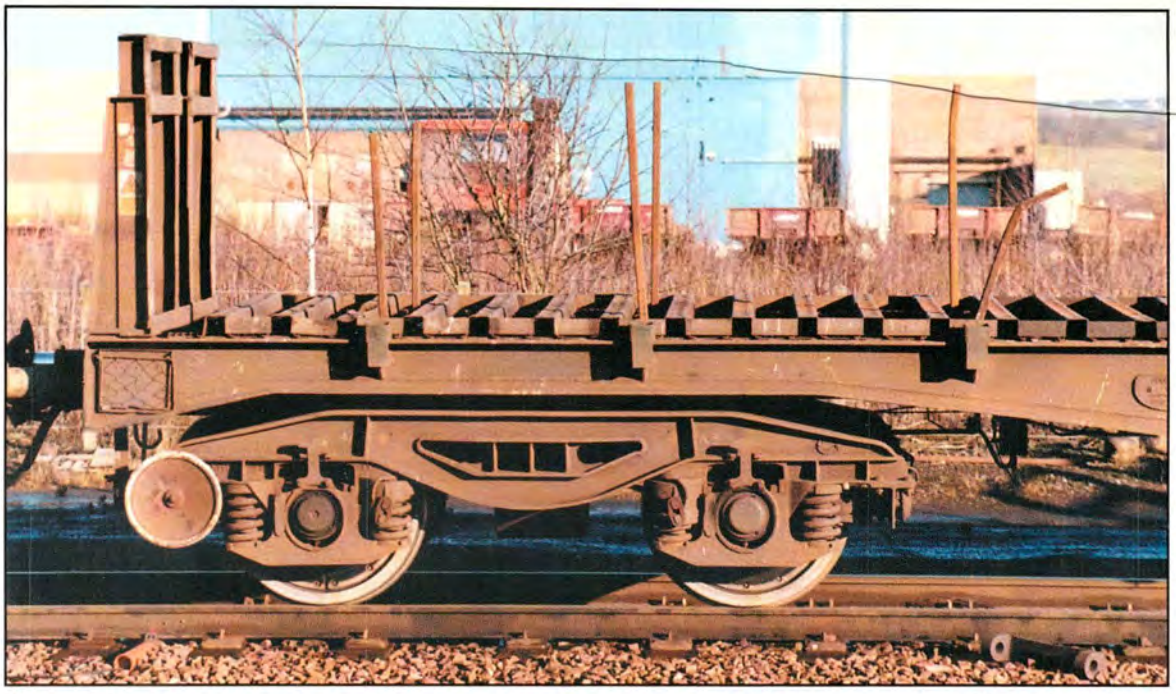


Plate 14. BAA. ***Dalzell, 1st October 2000***

A close up of the FBT6 bogie as fitted to all the BAA's. Fitted with 8 disc brakes and a solid disc brake hand wheel mounted at the end of the bogie frame. They are similar in appearance to the French Y25C bogies. The brake disc pads fitted to the inside rim of the axle can also be seen. The wheelbase on this bogie design is 6ft $6^{1/2}$ in. and the bogies on the BAA are centred at 26ft 6in. for all designs except BA002A which were decreased to 26ft 3in.

Plate 15. BBA. EWS. ***15th July 2002***

BBA's which were similar in appearance to the BAA's, but were 10ft 0in. longer with a deeper solebar and running on FBT6 bogies, were built from 1973 - 1980. Unlike the smaller BAA wagons the BBA's had a common end design. Seen here is BBA No. 910024 illustrating a standard design wagon with modifications carried out at Thornaby Carriage & Wagon Shop during 1999 - 2000. It is now fitted with swing motion bogies by ABC-NACO and has the brake wheel fitted to the solebar. It has however retained its standard fitted ends.

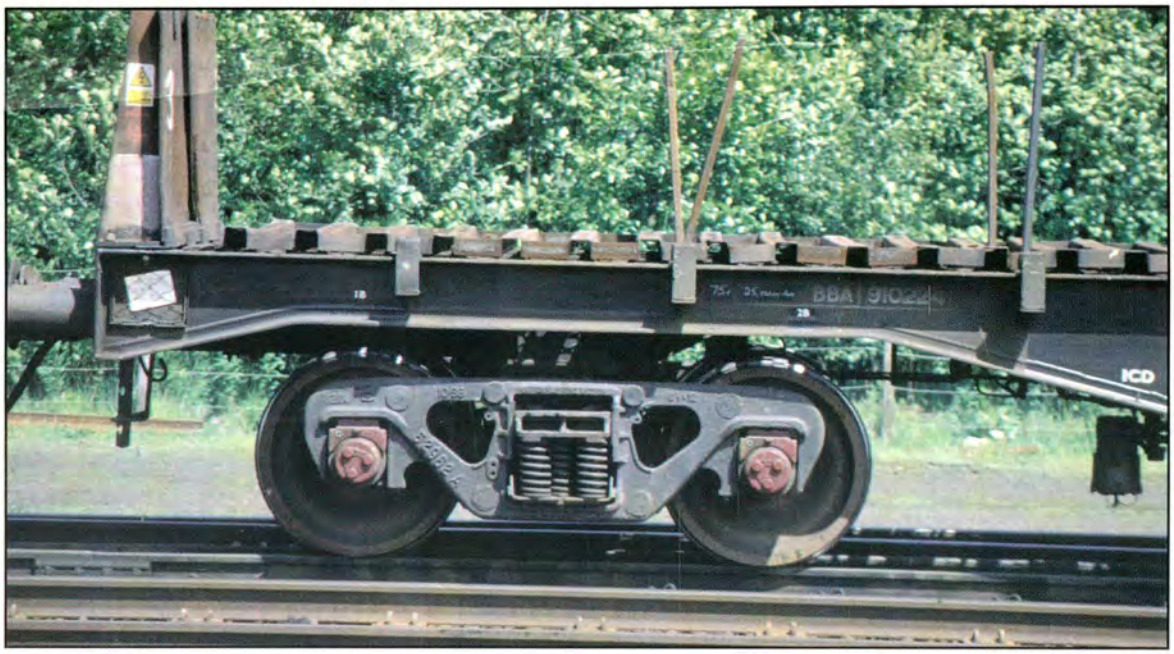


Plate 16. BBA. *15th July 2002*
A close up of the Swing Motion Bogies manufactured by ABC - NACO, as fitted to wagon No. 910024 seen in the previous **Plate No. 15**. It was originally built at Ashford Works to design code BB001C, Lot No. 3857 in 1975-76.

Plate 17. BBA. *15th July 2002*
This BBA wagon No. 910503 runs on the standard FBT6 bogies with the brake wheel mounted on the bogies. It has had the standard ends removed.

Plate 18. BBA. *15th July 2002*
A close up of the end of wagon No. 910503 showing the eliptical buffers fitted to these wagons. No. 910503 was from a batch of wagons built in 1979-1980 at Ashford Works to design code BB001F Lot No. 3959 and designated 74T Bogie Steel-Carrying wagon. Also noted has been wagon No. 910193 on the 1st August 2003 without ends. It is now modified to design code BB002B.

Plate 19. BDA. ***Mossend Yard, 2nd May 2002***

Originally built as a Bogie Bolster 'D' of 42 Tons carrying capacity between 1948 and 1959 to various diagrams, wagon No. 950758 was one of the later ones to be rebuilt at BR Shildon Works from 1978 to 1981 in three batches and one batch at BR Ashford Works. This vehicle is from the first batch to design code BD006C Lot No. 3925 and is identified by the retention of the braking lever arrangement on the solebar and is fitted with wooden timber bolsters. The rebuild involved the strengthening of the floor to accommodate the new 58T classification, new Y25C bogies and conversion to air brake with the necessary equipment. Ratchet load retaining straps were fitted to the solebars with holes cut in the floor to accommodate the web belts to pass over the load. They were also fitted with six bolsters as against the original four.

Plate 20. BDA. ***Mossend Yard, 2nd May 2002***

In this close up view of the same wagon the short stubby brake lever that is attached to the solebar is seen and in shadow under the wagon on the far side can be seen the Westinghouse air brake distributor. Just above the brake lever mounted on the solebar is the ratchet operated web belt for the retention of the load.

Plate 21. BDA (ex YAA BRILL). ***Mossend Yard, 17th February 2001***

Built at BR Ashford Works, Lot No. 3907, as a YAA to design code YA001A, with brake lever, 58t Bogie Steel carrying wagon No. DC 950018 carried the Fishknd 'BRILL' It was rebulit in 1977-78 as a BDA under design code BD006A. It is seen here in Departmental livery but as with other vehicles has returned to revenue use carrying reinforcing bars from South Wales.

Plate 22. BDA ***Mossend Yard, 17th February 2001***

In this view of wagon No. DC 95018 it shows the Y25C bodies that these vehicles ride on and also the retaining webbing straps that secure the load. Note that these pass through slots in the floor of the wagon with the ratchet units bolted to the solebars. Over a period ot time the stanchions used varied from round bar, rod or even reinforcing bar, whatever is to hand.

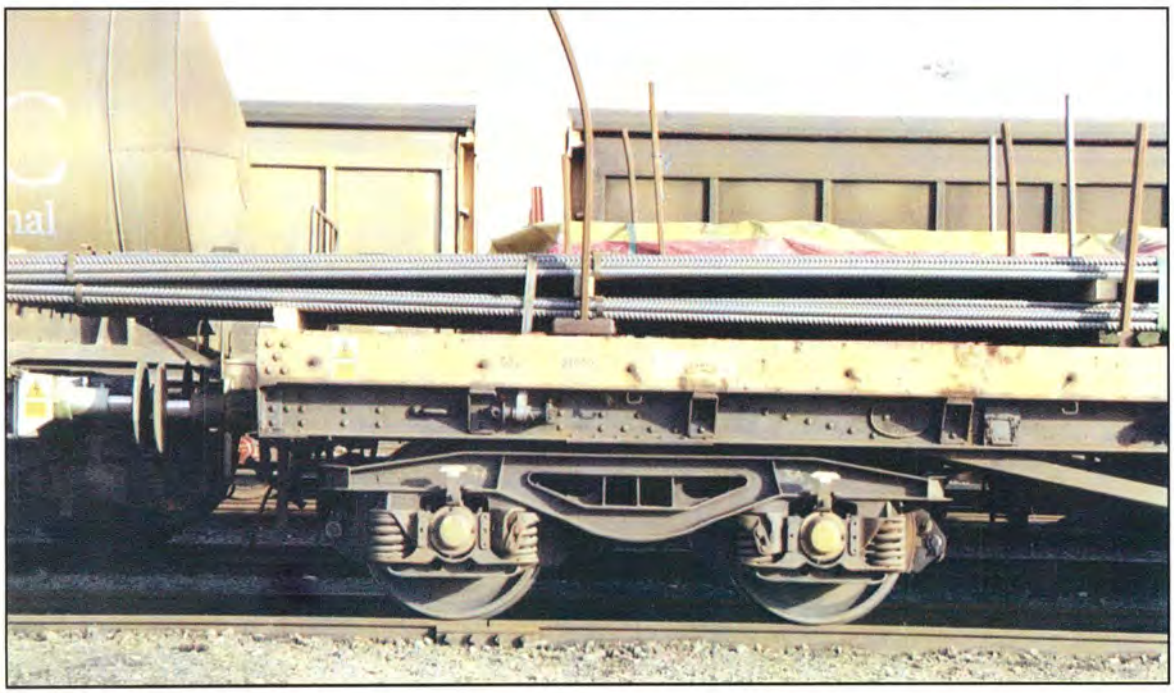


Plate 23. BEA. ***Mossend Yard, 12th May 2001***

Wagon No. 951021 is again a rebuild of an original 42 Ton Bogie Bolster 'D'. The work was carried out in 1980-1981 under Lot No.3968 at BR Shildon Works under design code BD006D. During the rebuild new bogies of type Y25C fabricated with plain roller bearings were fitted, together with a hand brake disc wheel mounted on the bogie itself. The bolsters were also increased from four to six. In 1998 the vehicle underwent a further modification to design codes BE004A/B/C affecting the bolsters and was re-coded as BEA.

Plate 24. BEA. ***Mossend Yard, 12th May 2001***

A further view of wagon No. 951021 showing in detail the fabricated Y25C bogie which is fitted to most of the BDA's and BEA's. They are fitted with axle mounted honeycomb disc brakes. The disc hand wheel is mounted off set from the centre of the bogie towards the end of the vehicle. Note the three bolt axle boxes and the yellow painted corners for safety.

Plate 25. BEA (Ex BLA). ***Mossend Yard, 17th March 2002***

Wagon No. 951063 was again a rebuild of a former Bogie Bolster 'D' , the work being carried out at BR Shildon in 1980 to Lot No 3968, 350 off, and design code BD006D and coded BDA. In 1984 a small batch of these wagons were re-coded BLA indicating that they could negotiate tighter curves as they had hand brake wheels mounted on each bogie rather than a brake lever on the underframe. They have since be re-coded to BEA's, in this case to design BE004B. One distinguishing feature is that the two end bolsters have deeper steel stanchions than the four middle ones and are fitted with thinner wood rubbing strips than the other four so they all maintain the same height. The livery is a somewhat faded early Railfreight Red.

Plate 26. BTA (ExBDA) EWS. ***P&D Stirling, Mossend Yard, 2nd June 2001***

Originally rebuilt in 1978-79 at BR Shildon Works to design code BD006C 58T steel carrying BDA, wagon No. 950734 was one of 800 wagons constructed to Lot No. 3925 modified to a BFA design code BF002A. In the early 1980's it was again converted to a BTA wagon for the conveyance of pipes, at Thornaby Wagon depot, having the bolsters removed and being fitted with heavy steel upright stanchions, but has still retained the original brake lever. It is shown with a load of pipes in EWS maroon livery.

Plate 27. IGA Cargowaggon Flat ***Wakefield, 20th May 2002***

Wagon No. 80 4736 006 was built in 1986 by Waggon Union, Siegen, West Germany to design code IPE670 this later being re-coded to IGE670 and was one of fifty wagons built. It has a tare weight of 25.00T and a GLW of 90.00T. It is fitted with DB WU83/m bogies having a top speed of 60mph. Seen loaded with steel bar at Cobra Railfreight premises in Wakefield. Note the blue stanchions.

Plate 28. IGA Cargowaggon Flat ***Mossend Yard, 2nd June 1998***

Built by Waggon Union Siegen, West Germany in 1990 to design code IGE726 wagon No. 80 4736-136 Code IGA. This was the second batch of fifty wagons to be built but to the new design code. It was also fitted with DB WU83/m bogies. Seen in the consist of 6S75 from South Wales to Mossend it is loaded with reinforcing bars and is arriving at Mossend Yard from Bescot. Although seen throughout Europe this vehicle carries the twisted wire logo associated with Allied Steel And Wire (A.S.W.).

Plate 29. IOB. ***Mossend Yard, May 1995***

Originally built as a curtain sided van by Arbel-Fauvet, France in 1983 to design code IUE545 (Ex IPE545) wagon No. 87 4746 035 was converted to design code IOE733 and given the wagon No. 87 4737 015 as a curtain sided van. It has since been further converted by the removal of the roof and the sides have been replaced by stanchions, and re-assigned as a steel carrier. The wagon is currently stored at Immingham Yard.

Plate 30. BRA. EWS. ***Mossend Yard, 2nd May 2002***

The latest design of steel carrying wagon is the BRA/BYA built by Thrall (Europa) of York. Externally the wagon types are identical the difference being BYA's are fitted with cradles for coil and BRA's with racking for steel bars. Wagon No. 964007 is one of the BRA's built during 1999/2000 to design code BR008B and fitted with NACO Swing Link bogies.

Plate 31. BRA EWS. ***Mossend Yard, 2nd May 2002***

Wagon No. 964023 manufactured to design code BR008A shows both the method of transporting bar material and the three part sliding roof in the partially open position. Note the yellow web strapping which secures the load and prevents any movement which may impede the opening of the sliding hood or damage the loads. Some of these wagons have been noted as barrier wagons especially with the non-buffered HTA bogie coal hoppers.

Plate 32. BRA EWS. ***Mossend Yard, 2nd May 2002***

Both BRA & BYA wagons are fitted with National Swing Motion 72 inch wheelbase bogies which are also fitted to other Thrall (Europa) built freight stock. The bogies are fitted with four brake shoes acting upon the inner face of the wheel. AAR 1A type roller bearings of size $6^{1/2}$in. x 12in. are fitted as standard. 52730-2C is the part number and 11-98 is the date the bogie frame was cast. On the solebar can be seen just some of the working instructions for the brake gear.

Plate 33. BRA/BYA ***P& D.Stirling, Mossend Yard, c.2002***

A useful view of one of the EWS hooded wagons being unload in the yard at P&D.Stirlings. The Volvo lift truck will be used to move the steel section clear of the wagon. The three piece sliding hood can be opened from either end to allow maximum flexibility. These wagons have been given the nickname 'Nissen Huts', given their similarity to the real mass produced huts of World War Two.

Plate 34. SKA (Ex SPA). ***Mossend Yard, 10th March 2000***

Wagon No. 460757 was originally built as a 31T Plate Wagon, SPA to design code SP020A under Lot No. 3962 at BR Shildon Works during 1980-81. During the early 1990's the wagon was converted to SKA Rod Coil Wagon to design SK003A. The three curved cradles can be seen above the side bar. Note that the original side drop doors have been removed completely. It is wearing a much faded Railfreight Flame Red livery and looks due for an overhaul!

Plate 35. RRA (Ex SAA). ***Mossend Yard, 23rd March 2003***

Built in 1971 at Ashford Works, wagon No. 400016 was to the original design code SA001A/B to Lot No. 3728 and was one of the early air braked design SSA 32T steel carrying wagons. Many have since been converted to Conflat P's (FPA) coal containers under Lot No. 4050. No B400016 was converted to a runner wagon by Railfreight design code RR034B coded RRB but has since been re-coded RRA and is used as a barrier wagon on steel trains.

Plate 36. RRA. (Ex SAA). ***Mossend Yard, 23rd March 2003***

A futher view of wagon No. B400016. The vehicle is almost in its original condition, retaining its fold down staves as is shown in this view where the first stave is held in the horizontal position by the small retaining bracket.

Plate 37. RRA. (Ex SAA). ***Mossend Yard, 23rd March 2003***

In this view the stave is in the locked vertical position with its end in the side pocket and the retaining lug locked down against it to prevent it from springing out during transit. Note also the brake handle linkage with its drop down link connecting to the cross shaft.

Plate 38. RRA. (Ex BREAM/VDA). ***Mossend Yard, 31st March 2001***

Wagon No. 210251 is an ex Departmental runner wagon having its number pre-fixed by DC. It was originally built in 1977-78 at BR Shildon Works Lot No. 3908, as a VDA 24T Vanfit. By June 1987 it had been converted to design code ZE001A and coded ZEA carrying the Fishknd name 'BREAM'. It was then converted under design code RR039C to a RRA. It is fitted with Single Link suspension.

Plate 39. RRA. (Ex BREAM/VDA). ***Mossend Yard, 31st March 2001***

Again a view of No. 210251 showing where the 'DC' prefixing the number has been blacked out together with its Fishknd name 'BREAM'. Note the mechanism of the linkage on the brake handle to that of **Plate 37**.

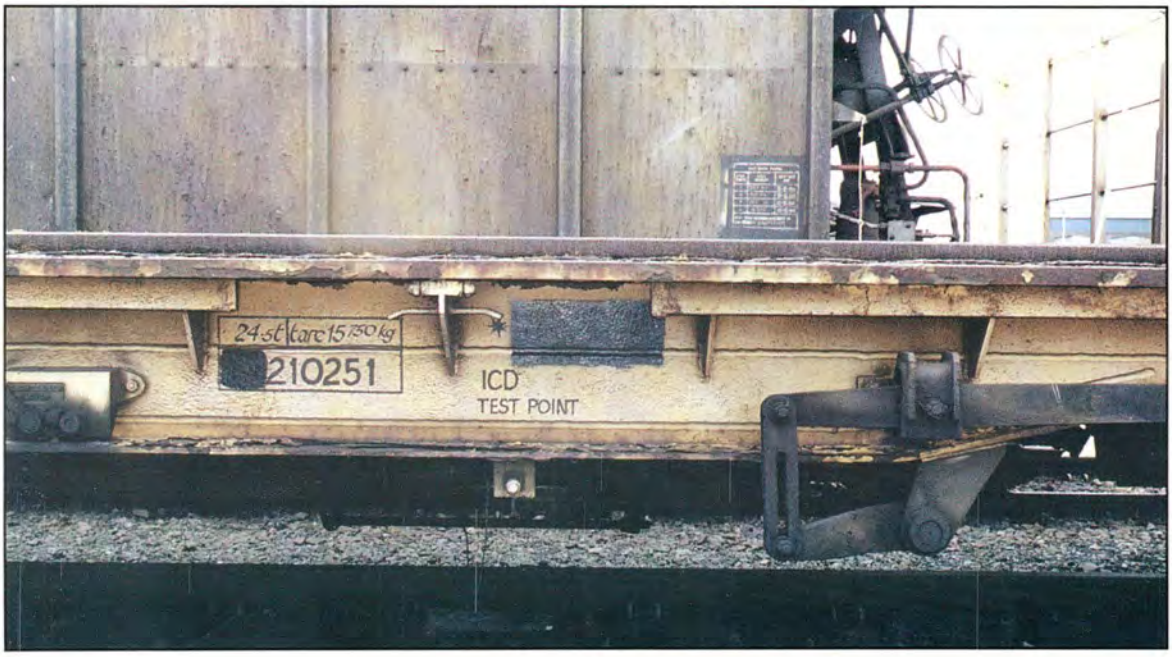


Plate 40. RRA EWS. (Ex OBA). ***Mossend, 10th February 2003***

Originally built as a 45T Open Goods Wagon in 1978-1979 to design code OB001C/E at BR Shildon Works. Wagon No. 110655 has been converted to a RRA barrier wagon by the removal of its body sides and also having the floor removed and replaced with wire mesh. It is seen being in use as a barrier wagon protecting the end of a large fabricated girder.

Plate 41. RRA. (Ex VDA). ***Mossend Yard, 28th February 2001***

This wagon was originally built as a 45T Vanfit at BR Shildon Works in 1976 to Lot No. 3855 and coded as VDA, but it has now lost its roof, sides and ends and has been re-coded as a RRA barrier wagon on steel trains.

Timber Wagons

Plate 42. OTA. (Ex OCA). *Mossend Yard, 19th January 2002*

The OTA family of timber carrying wagons originated from the requirement to convey raw timber logs from the loading points scattered throughout the Scottish Highlands to the paper mills for processing. Most wagons were conversions of air-braked vans or open wagons which could be easily and quickly adapted to their new role, the first examples being converted at Cardiff Cathays Works during August 1985 to design code OT001A. OTA No. 112289 is to design code OT001A and was originally built as an OCA 45T open goods wagon by BR Shildon Works between 1981/82 to Lot No. 4014 to design OC001A. This particular wagon has nine square stanchions and full height ends.

Plate 43. OTA. (Ex OCA). *Mossend Yard, 17th March 2002*

A further OCA to OTA conversion No. 112388 in EWS maroon livery is awaiting reloading. Note the small hoops on the top of the stanchions to aid relocation into any of the 13 slots along the side.This wagon has since been condemned.

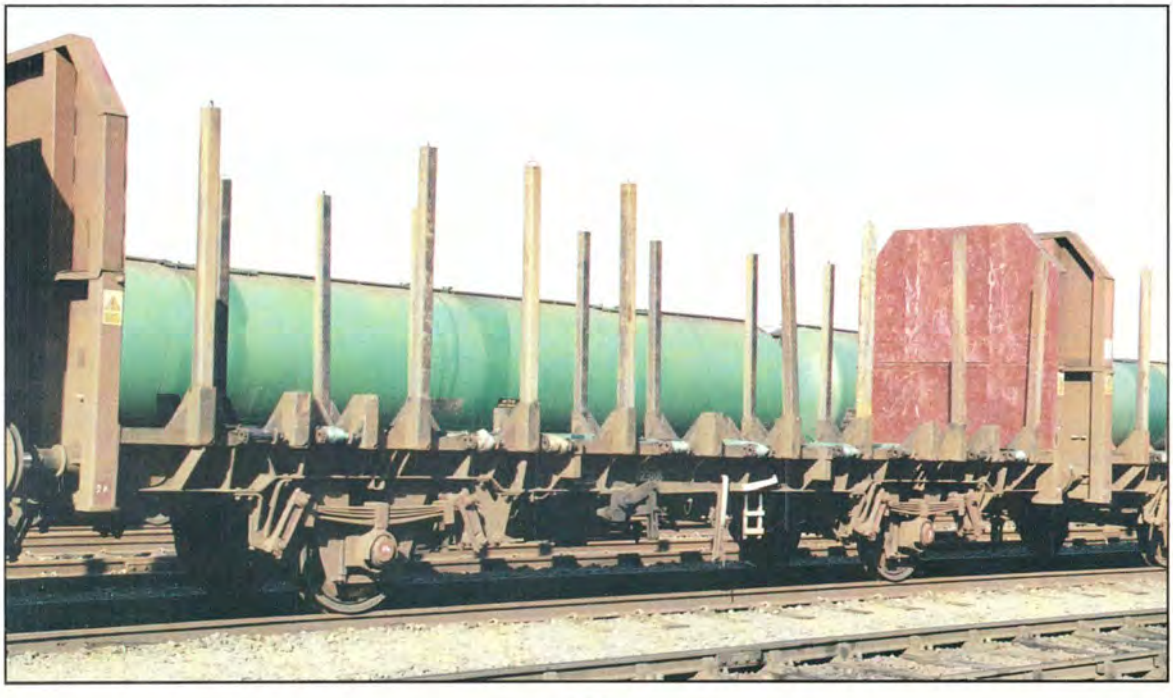


Plate 44. OTA. (Ex OCA). ***Mossend Yard, 27th October 2001***

This OTA No. 112237 shows a variation on the conversion of OCA wagons. Unlike the previous two wagons this wagon has a reduced height end and only 9 stanchion slots along the side. Livery would appear to be a much faded Railfreight Flame Red. Note the blue webbing straps which are used to secure the load when in transit.

Plate 45. OTA. (Ex OCA). ***Mossend Yard, 31st March 2001***

In terms of construction this wagon is identical to the one above. The only major difference is the green livery originally applied when the wagons were in Thames Board timber traffic. This is wagon No. 112291.

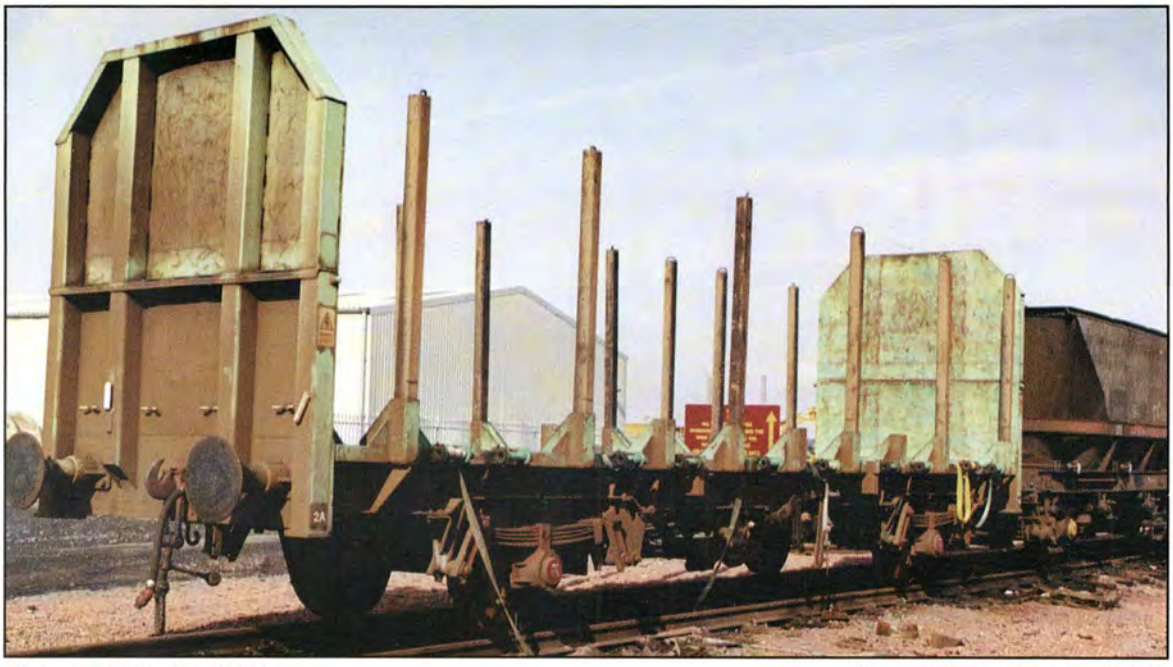


Plate 46. OTA. (Ex OCA). ***Mossend Yard, 17th March 2002***

In this view OTA No. 112318 is again in the faded green Thames Board livery. The horizontal bar on the wagon end marks the original height of the OCA wagon. Apart from the addition of the angled end extension pieces, the stanchions and slots, the web strapping reels and the removal of the side doors, no other alterations have been made to these wagons.

Plate 47. OTA. (Ex OCA). ***Mossend Yard, 12th August 2002***

Wagon No. 112386 is again from Lot 4014 being converted in 1987 to an OTA. It is in a faded blue livery of Thames Board Mills who used these wagons to/from Workington for timber traffic. A batch of 25 was authorised for conversion for this traffic in March 1986. By 1990 171 OTA's had been converted from surplus OBA/OCA and VDA wagons.

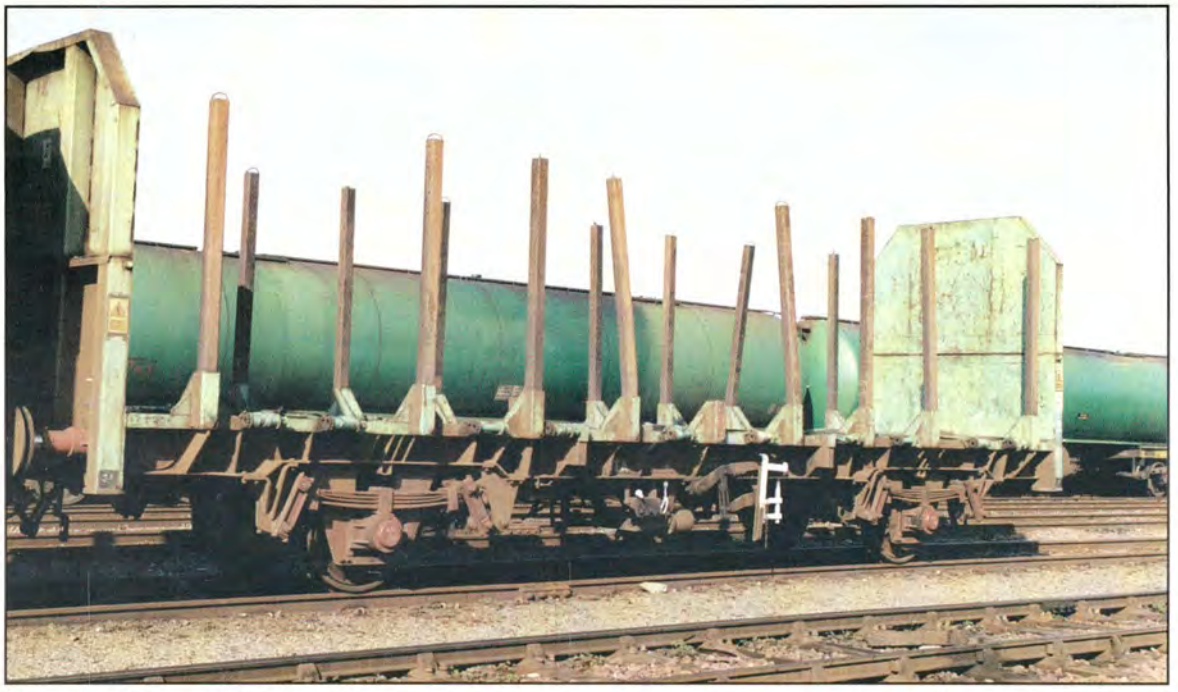


Plate 48. OTA. (Ex OCA). ***Mossend Yard, 17th March 2002***

A final look at the OCA conversions is this view of OTA No. 112389 in the faded Thames Board livery. This, together with the other OTA's shown, was converted under the design code OT001A/B/C at Workington in June 1987.

Plate 49. OTA. (Ex VDA). ***Mossend Yard, 4th June 2001***

A further example of one of the EWS OT003A conversions is OTA No. 200653. Comparing this design to the original OCA conversions highlights the retention of the original van ends with their ribbing and the new design of corrugated stanchions and 9 stanchion slots. Note the addition of the wagon running number and the tare weight on the ends.

Plate 50. OTA. (Ex VDA). ***Coatbridge Central, 10th June 2000***

En-route from Perth to Mossend Yard is OTA No. 200721 in faded Transrail Grey livery to design OT002A. As can be seen there are a lot of variations in the positioning of the stanchions and slots and the provision of the webbing strap reels along the side.

Plate 51. OTA. (Ex VDA). ***Mossend Yard, 19th January 2002***

Wagon No. 200814 is seen in full EWS livery. It is a conversion from a VDA originally built as a 45T Vanfit to Lot No. 3855 in 1976 at BR Ashford Works. It has the data panels on the ends.

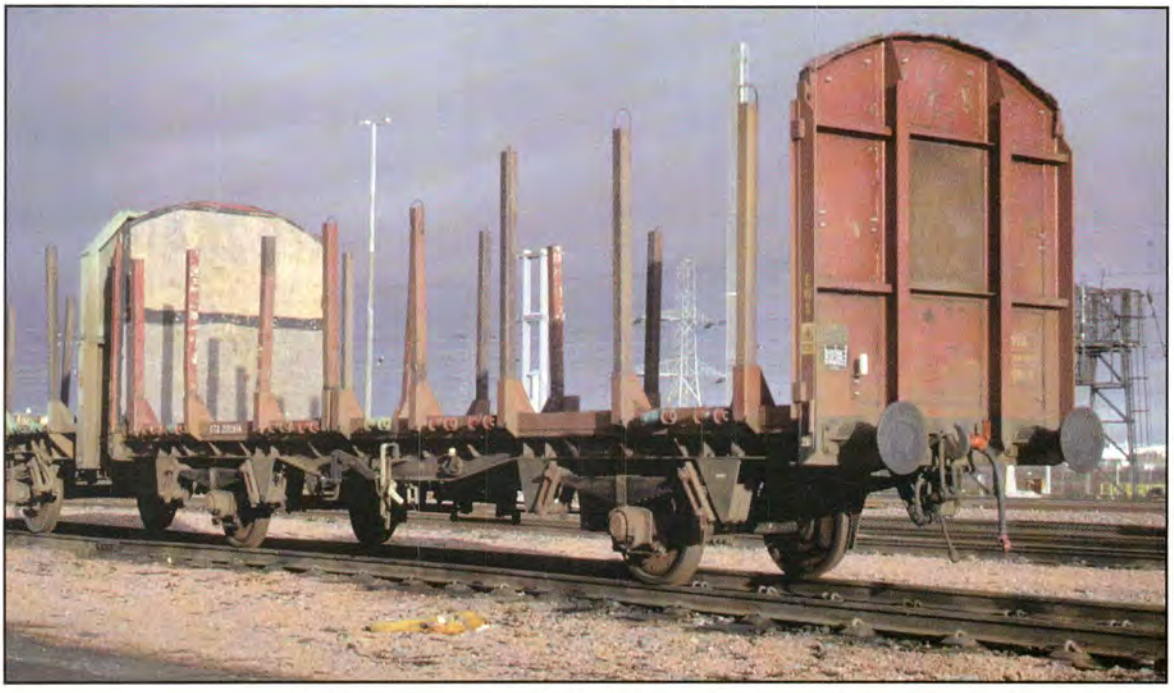


Plate 52. OTA. (Ex VDA). ***Mossend Yard, 15th April 1996***

OTA wagon No. T200945 is again a conversion from a VDA. A few of these converted wagons carried the Transrail code suffix 'T'. In this view we see one of these wagons painted in overall blue. Originally built to Lot 3855 in Nov. 1976 it carries the information on its body. The TOPS code and running number between the second and third stanchions. Note also the 'KRONOSPAN' logo on the end upright supports.

Plate 53. OTA. (Ex VDA). ***Mossend Yard, 26th January 2001***

Converted from another VDA van built to Lot No. 3908, at Shildon in 1977-78, wagon No. 210357 was converted in 1988 to an OTA.

Plate 54. YMA SALMON. ***Mossend Yard, 17th February 2001***

Having its design origins with the LMS this 'SALMON' was originally built as a vacuum braked wagon in 1957 at Teeside S&E Co.Ltd. to Lot No. 3067, diagram 1/646. It is now an air braked wagon No. DB 996677 being fitted in 1980's but retains its 8ft 0in. plate bogies and bolsters. It has a steel floor with bolsters and is used for the conveyance of rail.

Plate 55. YMA SALMON. ***Mossend Yard, 17th February 2001***

Close up of the 8ft plate bogies as used on the 'SALMON'. This type of bogie was much in favour with the Great Western Railway who developed it in 1891 and being one of the earliest types to be fitted to bogie stock. It still retains is plain bearing boxes, axleboxes and coil spring. Note also the end steps being made from channel section with the steps being welded into them. Along the length of the solebar can be seen the tensioner ratchets and retaining cleats.

Plate 56. YMA SALMON. *Mossend Yard, 17th February 2001*
In this view the air brake distributor and air reservoir can be seen mounted on the trusses mounted under the centre of the wagon.

Plate 57. YMA SALMON. *Mossend Yard, 17th February 2001*
A further view of the plate bogies but showing the hand wheel for operating the brakes manually. It is fitted to the solebar and operates the brakes through a linkage to the bogies.

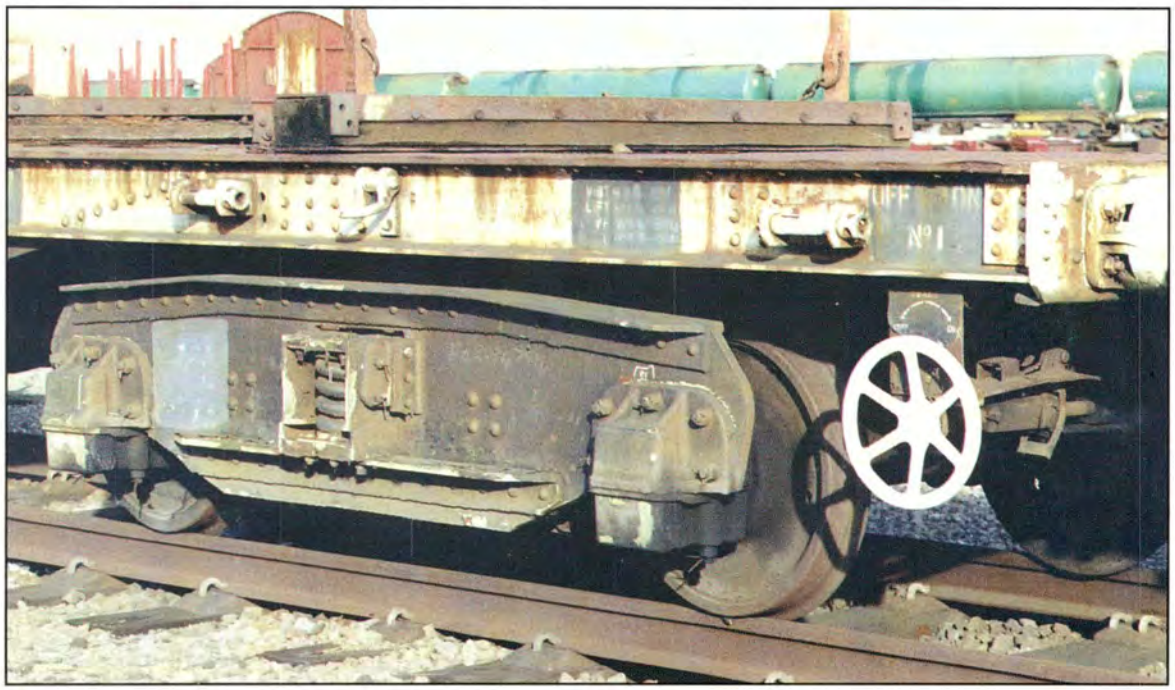


Plate 58. YSA. ***Mossend Yard, 17th February 2001***

Originally built in 1953 by Head Wrightson Ltd. as a 50T Bogie Rail Wagon, to diagram 1/642, Lot No. 2534, without power braking. Wagon No. DB 996215 has now been converted to air brake with the fitting of the equipment under the wagon, being mounted on the trusses. It has also been updated with the fitting of ASF 3 Part bogies to allow running at 50mph. It still carries a faded yellow engineers livery.

Plate 59. EWS YGH SEACOW (Ex Sealion). ***Mossend Yard, 31st March 2001***

Built as a 'SEALION' 45T Bogie Ballast Hopper, code YGH at BR Shildon during 1972-74 as part of Lot No. 3802 to Diagram 1/590. It is of standard rivet construction and is fitted with Gloucester type bogies. This wagon No. DB 982666 has been converted to air brake operation and painted in EWS colours. It has been fitted with a 3 part safety canopy.

Plate 60. EWS YGH SEACOW. *Mossend Yard, 31st March 2001*

As part of the 1981 - 82 build wagon No. 980177 was constructed as a SEACOW at BR Ashford to Digram YG500H with an all welded construction and fitted with Y27C bogies. It has only a single piece fitted canopy. Note that the lettering 'EWS' and 'SEACOW' are painted in white as against **Plate 59** where they are in the Yellow/Gold of EWS.

Plate 61. EWS YGH SEACOW. *Mossend Yard, 31st March 2001*

Another of the 1981-82 Ashford built wagons No. DB980220 is the same in its construction but it has been fitted with a 3 part safety canopy. Again the lettering is in white. It appears from the paint patching on the side that it has undergone some repair work in the last few months.

Plate 62. YCA HALIBUT. ***Mossend Yard, 19th August 2001***

Built at BR Shildon Works in 1980 to design code YC501A, Lot 4006 wagon No. DB98100 was one of only two wagons constructed and given the type Code YCA 'HALIBUT'. They were 52T Bogie Ballast/Sleeper Carriers. They are fitted with Y25 bogies. Though in a somewhat rusted state both are still in service.

Plate 63. YCA HALIBUT.
Mossend Yard, 19th August 2001

A view of the inside of the vehicle showing the plain sided and floor construction. It is littered with many items of P.W. hardware including pandol clips, base plates and fish plates used in track construction.

Plate 64. YCA HALIBUT.
Mossend Yard, 19th August 2001

In this view further details of the 'HALIBUT' is shown. The door drop down supports together with the substantial buffers and the foot step at the end of the wagon can be clearly seen.

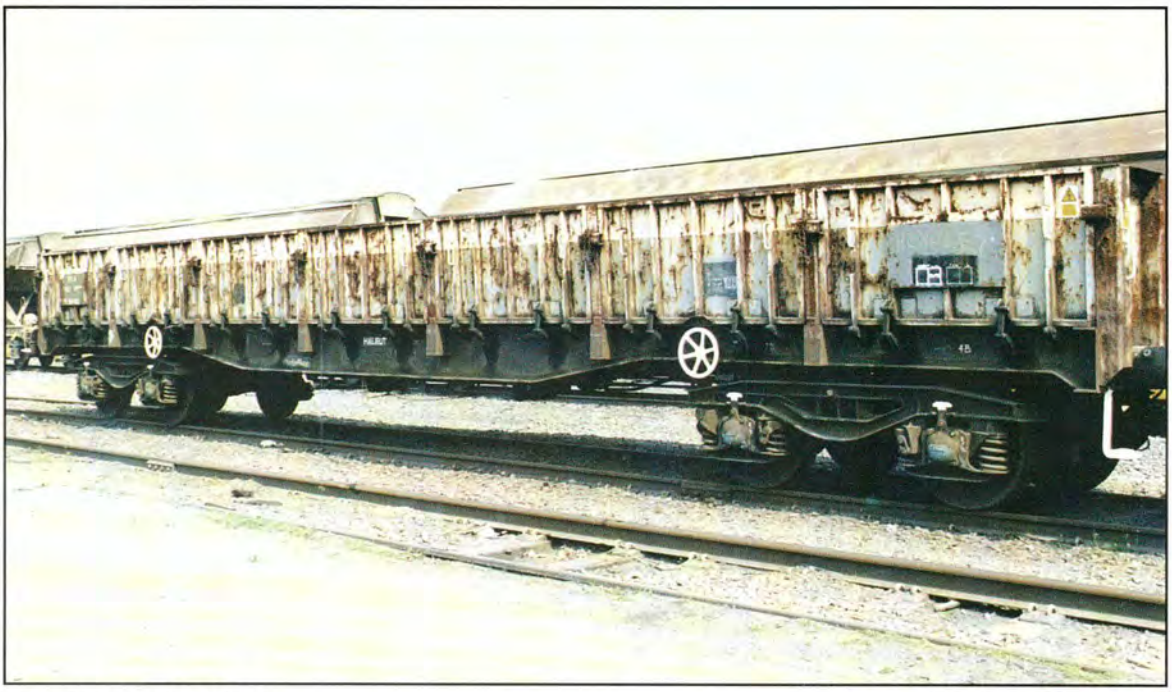


Plate 65. YCA HALIBUT. ***Mossend Yard, 31st March 2001***

The second wagon built, No. DB981001, in the yard at Mossend. Again it is in a very rusted condition but is still in service. In this view can be seen the seven side doors held in place by the side stanchions.

Plate 66. YLA MULLET. ***Mossend Yard, 7th August 1997***

Wagon No. DC 967633 from Lot No. 4012 at Shildon Works in 1981-1982 and was built as a 49t Borail wagon coded BRA. They were all transfered to departmental stock in the C.C.E. fleet and re-coded YLA having the number pre-fixed with DC. The wagon is seen here as it was intended to be used transporting rail. It carries both the Transrail 'T' logo and Carlisle Currock Depot symbol.

Plate 67. YLA MULLET. ***Mossend Yard, 8th February 2003***

Wagon No. DC 976629 is from the same Lot No. 4012 as the previous **Plate.** It is seen here being unloaded at P.&D. Stirling, Mossend Yard. These substantially built wagons were usually associated with the carriage of rail but here is seen carrying long steel piles necessitating the use of barrier/reach wagons as seen in **Plate 40**.

Plate 68. YLA MULLET. ***Mossend Yard, 8th February 2003***

In this view of wagon No. DC 967617 of the same batch as the other two views, we see close up details of the buffers and the Y25C bogies and the strap pockets on the side of the wagon.

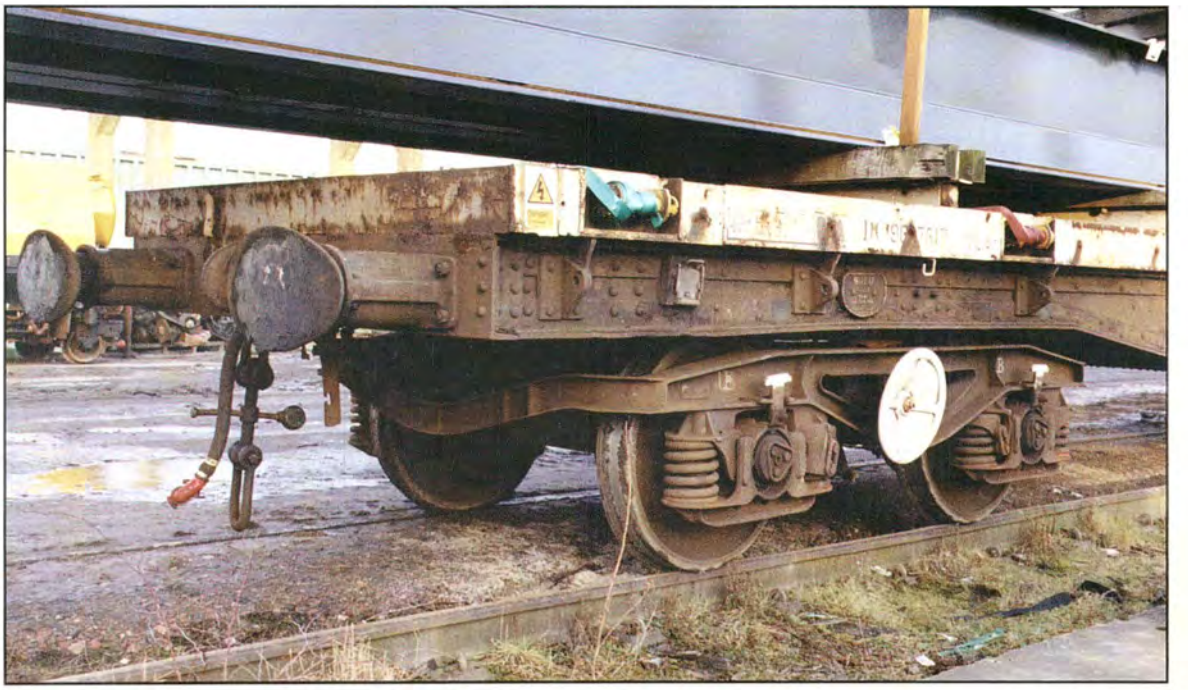


Plate 69. ZBA RUDD. ***Mossend Yard, 13th July 2002***

Built in 1989 by Marcroft Engineering C.C. Crump Ltd. wagon No. DB972042 was built as a ZCA 'RUDD' 21T ballast wagon but has been re-coded to ZBA. These wagons were constructed on redundant ex 21T hopper wagons. They are used mainly for the conveyance of waste ballast. No DB 972042 is seen in a very faded engineers grey and yellow livery.

Plate 70. ZBA RUDD. ***Mossend Yard, 10th June 2001***

Wagon No. DB 986446 was built originally as a 'GRAMPUS' in 1956 by Cambrian Wagon Works to Lot No. 2886 Diagram 1/572 and coded ZBO. It was converted to a 'RUDD' by the fitting of air brakes, Oleo buffers and reinforced ends using design code ZB501U. It has still retained its original side doors unlike the above wagon which had had a complete new body made. Note the small 'EWS' branding on this very faded and battered rusted body.

Plate 71. ZCA SEA URCHIN. ***Kilwinning, 10th May 2000***

Originally built as a 45T Open Goods wagon code OBA between 1977-79 at Ashford Works, to Lot No. 3909, for Departmental Stock, to design code ZDI143A/B/C and carried the Fishknd name 'BASS' with the number pre-fixed with DC. Wagon No. T110469 is now in Transrail livery, and has been converted to a ZCA but still retains its 'Transrail' logo and has been given the Fishknd name 'SEA URCHIN'.

Plate 72. ZCA SEA URCHIN. ***Mossend Yard, 28th October 2001***

Another ex OBA conversion, wagon No. 110181, was from the same Lot No. 3909. It is in a very rusty Dutch Livery and still carries the TLF-W branding.

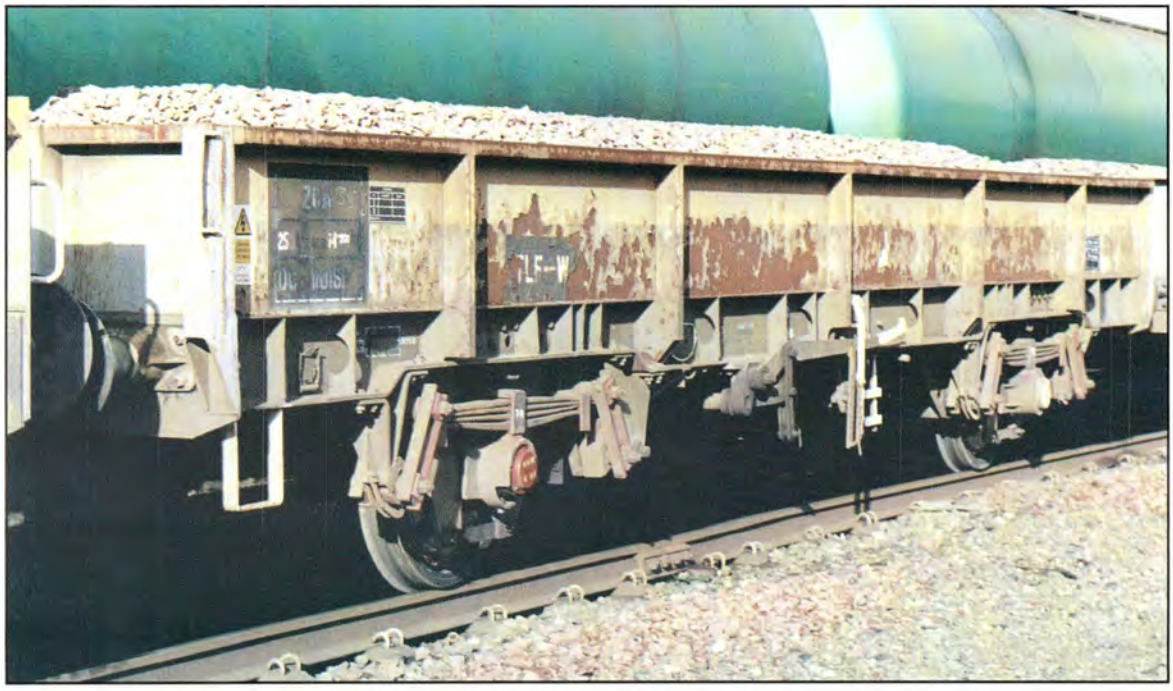


Plate 73. ZCA SEA URCHIN. ***Mossend Yard, 28th October 2001***

From the same Lot No. 3909 wagon No. M110128 is an ex OBA conversion but is seen carrying the overall blue livery of Mainline with the top rail painted in yellow and has the number pre-fixed with the letter 'M'.

Plate 74. ZCA SEA URCHIN. ***Mossend Yard, 28th October 2001***

This conversion of wagon No. 210246 is from an ex VDA van originally built in 1977-78 at BR Shildon Works to Lot No. 3908 as a 45T Vanfit wagon. It is in a faded standard Dutch livery of yellow and grey but has had one side panel painted in Mainline blue with the 'Mainline' branding in white on it.

Plate 75. ZCA SEA URCHIN. ***Mossend Yard, 28th October 2001***

Again this conversion is from a 45T Vanfit (with centre doors) code VCA. Wagon No. 200350 was originally built at BR Ashford Works in 1971 under Lot No. 3764 to Diagram 1/262 but has since been converted to a ZCA under design code ZC020E and given the fishknd name 'SEA URCHIN'. It is shown here in full EWS livery.

Plate 76. ZCA SEA URCHIN. ***Mossend Yard, 28th October 2001***

Wagon No. DC460552 is a conversion to a ZCA from a SPA steel carrier having first been built in 1979-80 as a 31T Plate Wagon at BR Shildon Works to Lot No. 3839 design code SP020A. The conversion has been carried out under design code ZC021E and placed under the departmental stock numbering having its no. pre-fixed by 'DC'. It is again in full EWS livery.

Plate 77. ZCA SEA URCHIN.

Mossend Yard, 31st March 2001

In this detail view of wagon No. T110200 it shows the Oleo Pneumatic buffers fitted to these wagons as well as the 4 leaf Bruninghaus springs and FAT 7 type suspension and SKF roller bearings. It also still carries the Transrail 'T' logo.

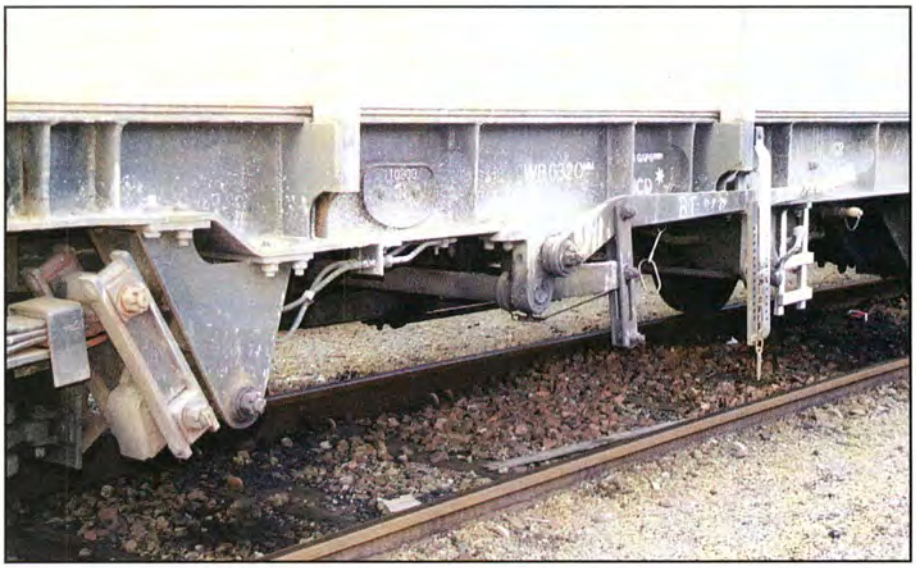


Plate 78. ZCA SEA URCHIN.

Mossend Yard, 31st March 2001

In this view of wagon No. T110200 details of the brake lever and linkage is shown together with the spring support bracket, which in this case is a solid front fabricated unit not as the open consruction unit of the other end of the spring as in **Plate 77.**

Plate 79. ZCA SEA URCHIN.

Mossend Yard, 31st March 2001

In this view of wagon No. 110077 in Mainline blue livery we see the other side of these wagons showing the brake lever and linkage as well as the air operating cyclinder and release valve.

Plate 80. ZCA SEA HORSE. ***Mossend Yard, 28th October 2001***

A different conversion, this time it is a 'SEA HORSE' converted from a OCA. Originally built for Deparmental Stock in 1981-82 as DC112073 as a 45T Open Goods Wagon to design code ZD148A it was coded ZDA and carried the Fishknd name 'BASS'. It now carries the name 'SEA HORSE'. Note the high ends and also the 'South East' branding on the side.

Plate 81. ZKA DOORAND. ***Crewe (Basford Hall),16th February 2001***

Wagon No. DC390304 is a further conversion of the MKA 'LIMPETS' utilising redundant tank wagon underframes to make coded ZKA 'DOORAND's which involved the reduction of both the body sides and the ends. Before conversion into BR fleet this was a private owner POA open wagon NACO 5382 (ex TRL5382) to design code PO016J. This was converted by C. C. Crump, of Connah's Quay, in 1988 using the underframe from 50T Shell TTA tanker SUKO 63810. It was converted originally for use in the construction of the Channel Tunnel.

Plate 82 MFA. ***Crewe (Basford Hall), 16th February 2002***

Built utilising redundant HEA underframes wagon No. 391059 became a MEA bodied wagon only to undergo a further conversion to a MFA, due to a surplus to traffic of the MEA's, to fill the need for ballast/spoil wagons by the reducing of the body sides and ends down to a height of 1.13 metres. The work was undertaken at Doncaster and Stoke Wagon Works to design code MF001A. It still retains the Oleo buffers and suspension from its HEA days. The livery is a some what faded Railfreight Coal Sector dark grey and yellow. These wagons are now used as spoil wagons.

Plate 83. MFA. EWS. ***Crewe (Basford Hall), 16th February 2002***

Wagon No. 394170 is another conversion from a MEA, the original being a HEA, retaining again its underframe details, but having the full livery of EWS with the top rail in yellow/gold. Note the end fitted with a solebar mounted step and small grab rail.

Plate 84. MFA. ***Gresty Lane Yard, 11th March 2003***

Wagon No. 391493 is a further conversion cut down MEA to MFA in use on a spoil train at Gresty Yard. The wagon is again in full EWS livery.

Plate 85. MHA COALFISH. ***Crewe (Basford Hall), 16th February 2002***

With the need for more air braked engineers wagons and a surplus of MGR coal wagons an initial batch of 125 wagon conversions were carried out by Wabtec at Doncaster from June 1997 by the fitting of new low height box bodies to the underframes of the HAA hopper wagon and the removal of the bottom door opening mechanisms. Wagon No. 394170 is one such conversion to design code MH001A. In most cases the original donor wagon numbers are unknown.

Plate 86. MTA EWS. ***Gresty Lane, 11th March 2003***

This EWS wagon, No 395060, is similar to the PNA wagons being built on redundant tanker wagon underframes, in this case a Shell tank wagon, by RFS/WABTEC at Doncaster during 1998-99. It still retains its Double Link and Parabolic springing together with the OLEO buffers and are fitted at one end with steps and grab rail. Note the angled top rim.

Plate 87. PNA Railtrack. ***Gresty Lane, 11th March 2003***

CAIB 3619 was built by Marcroft Eng. at their Stoke Works during 1998 to fill the need for additional air braked ballast/spoil wagons. The initial batch of wagons were built on donor TTA tank wagon underframes owned by SUKO (Shell Oil) for Railtrack, and fitted with a simple box body. Again they retained all their original suspension details and buffers. Note that the wagon data panel has the details written in chalk and not stenciled in paint as on other wagons.

Plate 88. PNA Railtrack. ***Gresty Lane, 11th March 2003***

Wagon No. CAIB 3693 has yet a different body design having only five side body supports on the box body but still utilising redundant tank wagon underframes. This conversion was built by Marcroft during 1999. Again note the hand written information in the data panel box and also the disparity in the buffer heights between this wagon and the next.

Plate 89. PNA Railtrack. ***Gresty Lane, 11th March 2003***

On wagon No. CAIB 3798 we see a futher example of different body design. These later conversions utilised different underframes many of which came from former Castle Cement PCA's. This wagon is fitted with Gloucester Primary suspension and hand brake wheel mounted at one end only.

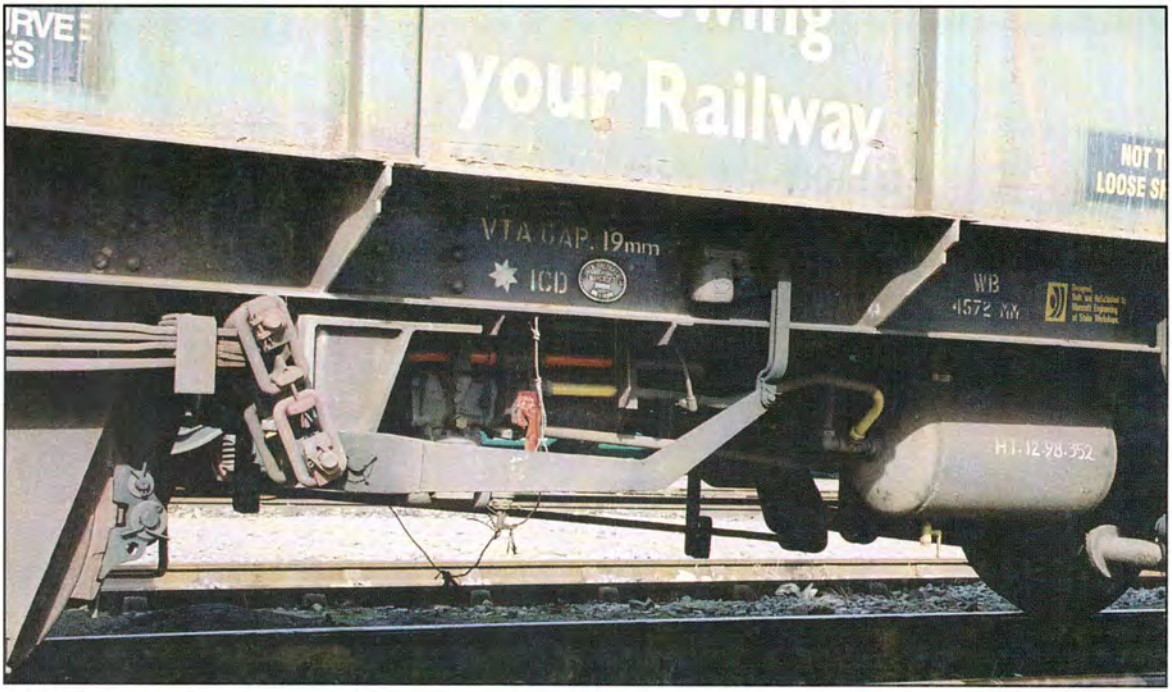


Plate 90. PNA Railtrack. *Gresty Lane, 11th March 2003*

In this view of wagon No. CAIB 3693 we see details of the pipework to the air brake cyclinder and brake distributor. The Double Link bracket of the suspension is to the left of the picture. Note the retaining pins and cotter pins holding the brake shoe block into its holder and onto the brake bracket.

Plate 91. PNA Railtrack. *Gresty Lane, 11th March 2003*

Wagon No. CAIB 3693 shows in this view the brake lever and the linkage to the cross arm for manually operating the brakes. The Timken roller bearing housing with its end cap painted yellow is to the right of the view. Note on the solebar the 'CAIB' logo saying **'Designed, built and refurbished by Marcroft Engineering at Stoke Workshops'**.

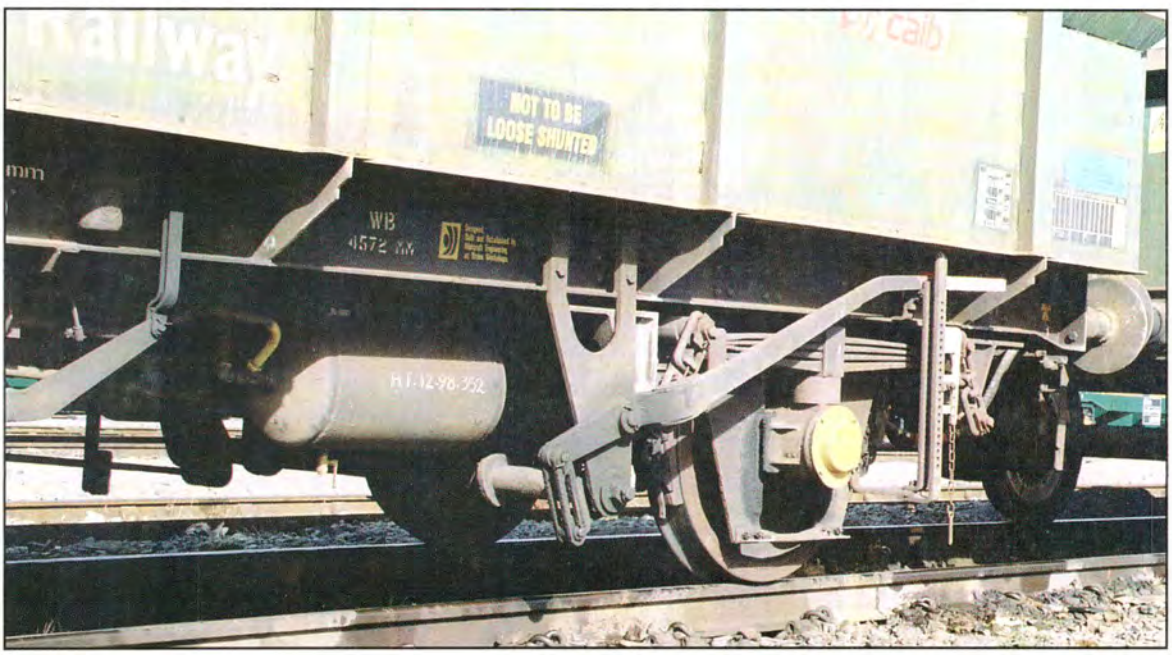


Plate 92. MCA EWS. ***Gresty Lane, 11th March 2003***

Originally built as MBA's (Megabox) these wagons were reduced in height, under design code MC100A, during 2000-2001 by Thrall (Europa) Ltd. at their York works, and given the number series 500201 - 500240. Wagon No. 500209 shows the duel couplings, buckeye and hook, it also is fitted with buffers at both ends. They still retain their NACO Swing Motion bogies and the one piece wheels.

Plate 93. MDA EWS. ***Gresty Lane, 11th March 2003***

Wagon No. 500262 is a further example of an MBA having its sides reduced down, but is an inner wagon to design code MC100B not having any buffers fitted at either end and only having buckeye couplings fitted. These normally form part of a five wagon rake comprising of 3 inner (MDA) and two outer (MCA) wagons.

Plate 94. JNA *Crewe, Gresty Lane, 11th March 2003*

These wagons were introduced as to supply fresh granite ballast to ballast stockpiles which were established around the country and known as 'Virtual Quarries'. Rather than running ballast trains from the quarry loading point ballast required for track renewal work would be sourced from the stockpile. The PNA's were used to bring the ballast from the main quarries to these 'Virtual Quarries'. Wagon No. CAIB 3464 was constructed at Marcroft Works in Stoke during 1998. The initial batch of 19 were built on BSC bogies recovered from scrapped tanker wagons. Later wagons ran on Gloucester standard bogies. There were 26 design codes used in the construction of 120 wagons, No. CAIB 3464 was to JN053A. The wagons have a capacity of 78 tons with a GLW of 102 tons.

Plate 95. JJ Railtrack. (Autoballaster) ***Gresty Lane, 11th March 2003***

Another rebuild is the Railtrack JJA carried out by WABTEC (Doncaster) during 2001 is wagon No. GERS 12985, this was originally built as a 90t KPA bogie hooper wagon and owned by Tiphook Rail No. 83 70 6905 154-3. This was converted from a G.E.Capital owned wagon stored at Carnforth. The conversion work involves the removal of the original centre discharge doors and the installation of eight remotely controlled doors allowing the ballast to be placed accurately. Wagons run in rakes of five with a generator system to supply its own power. Donor wagon for this conversion features in Volume 1 Plates 39 and 40. This wagon has Y25 bogies and carries the 'Railtrack Renewing Your Railway' branding. Out of original 150 wagons, 104 were converted into Autoballasters.

Plate 96. PAA (PCA). ***Middlesborough Goods, 19th May 2002***

Seen in storage at Cleveland Potash's Depot at Middlesborough Goods, wagon No. PCA 9484 was built in 1976-77 by Procor at Wakefield, to design code PC010C, and further rebuilt by Procor in 1988 to design code PA013A. It has BSC Friction Pedestal suspension. It was originally built to carry Soda Ash for ICI but was later hired to Cleveland Potash.

Plate 97. PCA. ***Mossend Yard, 22nd July 2000***

Wagon No. BCC 10842 was one of a batch of twelve wagons built in 1980 by CFMF of France to design code PC017A. It has a GLW of 51.00T riding on Gloucester Floating Pedestal suspension. When photographed it was being loaded with Fly Ash from Longannet Power Station for transportation to Westbury. Of note is the broken line data panel box.

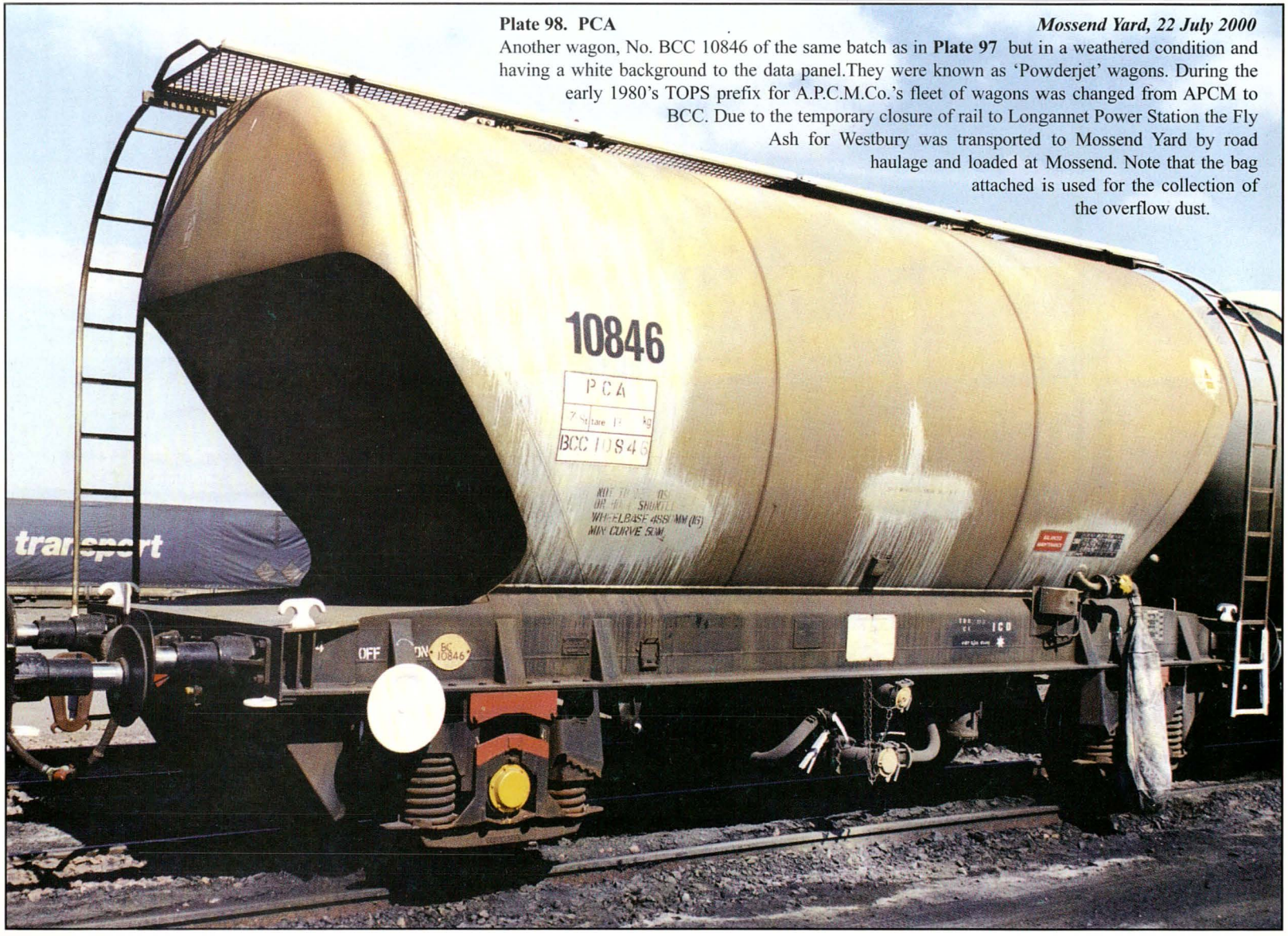
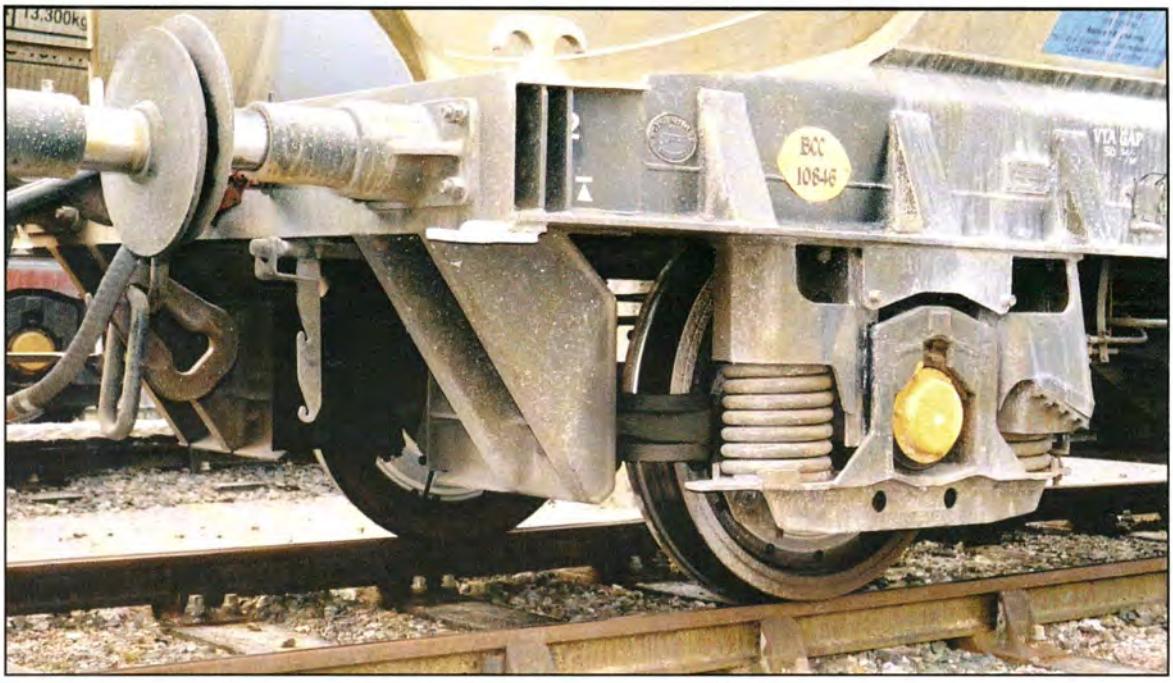


Plate 98. PCA ***Mossend Yard, 22 July 2000***

Another wagon, No. BCC 10846 of the same batch as in **Plate 97** but in a weathered condition and having a white background to the data panel.They were known as 'Powderjet' wagons. During the early 1980's TOPS prefix for A.P.C.M.Co.'s fleet of wagons was changed from APCM to BCC. Due to the temporary closure of rail to Longannet Power Station the Fly Ash for Westbury was transported to Mossend Yard by road haulage and loaded at Mossend. Note that the bag attached is used for the collection of the overflow dust.



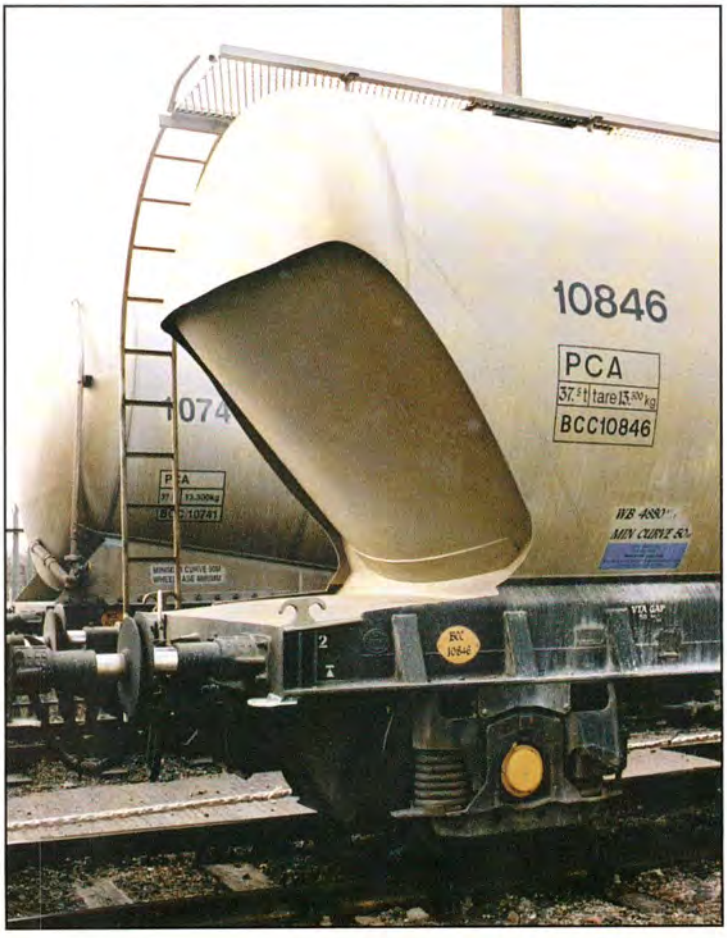


Plate 98. PCA
Viewpark Cement Terminal, 11th March 2003
A closer look at the Gloucester Suspension unit fitted to PCA No. BCC 10846. Also note the substantial angled support bracket for the brake caliper which acts on both outer and inner faces of the wheel sets. Note the ferry tie hook mounted on the end of the solebar. Oleo freight buffers are fitted as standard.

Plate 99. PCA
Viewpark Cement Terminal, 11th March 2003
Looking at the end of the wagon, the Gallic influenced curves are most apparant on the inner barrel. The access ladder is fitted on the left hand side at each end. The Blue Circle Cement wagons are numbered APCM 10838 and BCC 10839 - 10849. Another batch of these wagons was also built by C.F.M.F. in 1982/3 for STS (Storage & Transportation Systems Ltd.) to design code PC017B No's STS 10600 - 10651. This batch is now operated by Castle Cement. The third and final batch was built by Fauvet-Girel, of France in 1985 again for STS to the design code PC017C. What is unusual about this batch is that the wagons are numbered STS 74030 - 74044 and not in the 10xxx series. These wagons are also operated by Castle Cement from Ketton to Kings Cross.

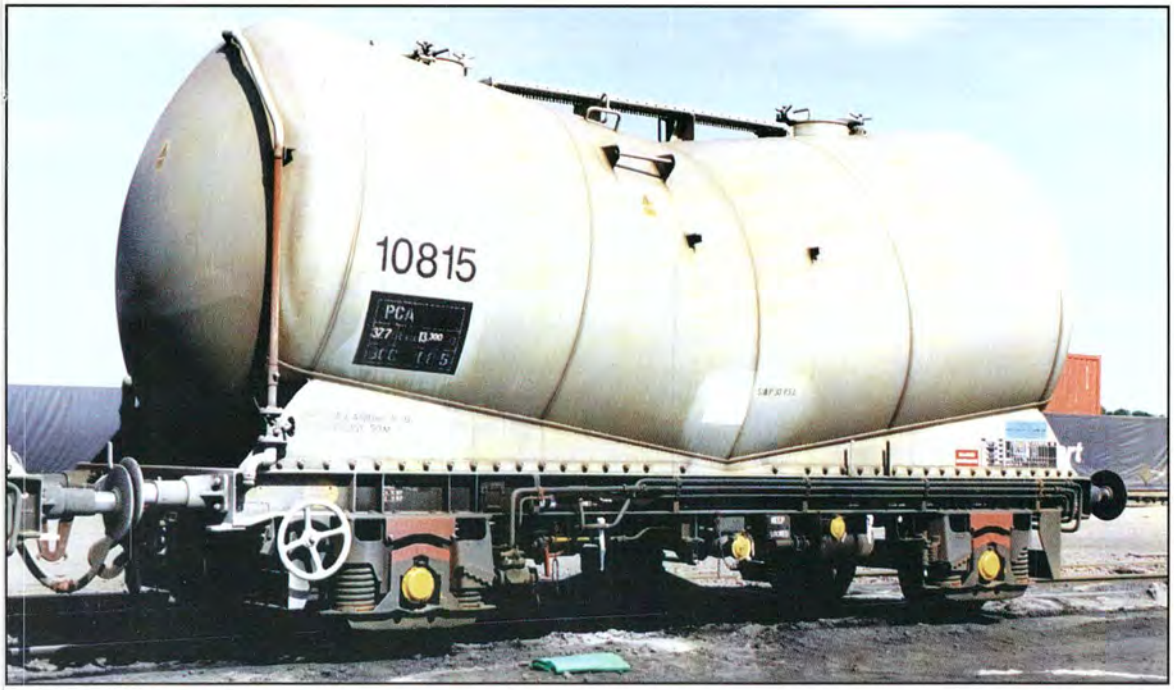


Plate 100. PCA. ***Mossend Yard, 22nd July 2000***

Built by BR Ashford in 1981 wagon No. BCC10815 is to design code PC009E. It has Gloucester Floating Axle suspension and a GLW of 51T. It was the most common barrel design of all the cement wagons but at the time of the photograph it was employed on the transportation of Fly Ash. Note the data panel has a black background and the tops of the suspension units have been painted in oxide red.

Plate 101. PCA. ***Mossend Yard, 22nd July 2000***

From the same batch as **Plate 100** wagon No. BCC10820 is showing the other side of these vehicles with the uncluttered solebars devoid of the pipework. Note also the position and size of the number together with the unpainted background of the data panel.

Plate 102. PCA ALCAN. ***Blyth, 6th June 1994***

These wagons were converted from cement PCA's built to design code PC009A by E.G. Steele of Hamilton and are used for Alumina Traffic from Blyth to Lynemouth. The conversion work involved alterations to the catwalk and the pressure discharge system. Wagon No. ALCN 11203 (original No. APCM 9304) is one of the original wagons modified during 1993 there being a total of 11 being constructed. This was followed by a further 20 being modified by Marcroft during 2000 all to design code PC009N.

Plate 103. PCA ALCAN. ***E.G.Steele, Hamilton, c. 1994***

As in **Plate 102** the cement PCA's were modified for Alcan traffic at E.G.Steele's in Hamilton. This shot shows the modified walkways fitted and the new centre loading hatch.

Plate 104. PCA. BLUE CIRCLE CEMENT. ***Whifflet, 20th April 1994***

Forming part of the Oxwellmains to Uddingston cement train, wagon No. BCC11046 is one of the Powell Duffryn, of Cardiff built batch constructed between 1984-1987 to design code PC018B and fitted with a Metalair body. It is mounted on a Gloucester Floating Axle chasis. The GLW is 50.35T with a tare weight of 12.85T. It also carried the 'Blue Circle' legend in blue.

Plate 105. PCA. ***Mossend Yard, c. 1999***

Wagon No. 11003 of the same batch as **Plate 104** showing a plain though somewhat grimy grey body livery. Clear in this view is the cladding of the Metalair body. These wagons are used on workings to and from Hope and Dunbar works.

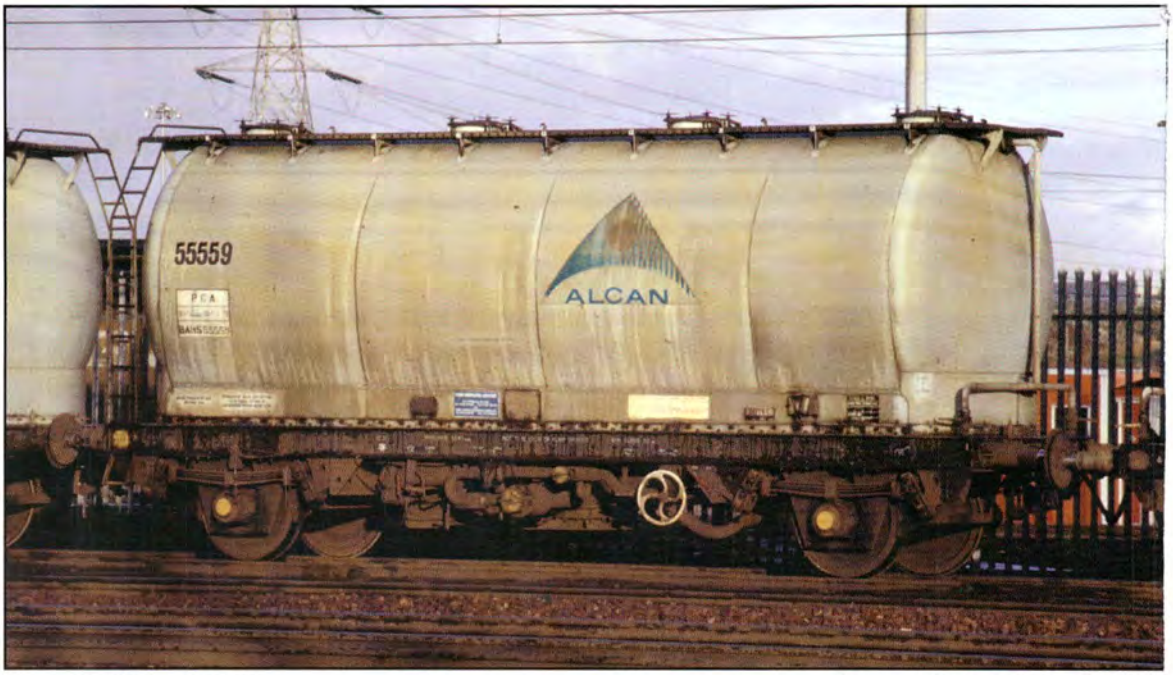


Plate 106. PCA. ALCAN. ***Mossend Yard, 26th October 2001***

Wagon No. BAHS 55559 is part of a batch produced in 1987-88 by Powell Duffryn, Cardiff, to design code PC020A, for the conveyance of Alumina traffic between Blyth and Fort William. They are fitted with a FAT 26 Parabolic Spring UIC Double Link suspension system giving a maximum speed of 60mph. The body design is similar to the cement wagons built by Powell Duffryn but have an overall length of 31ft 8in.

Plate 107. PCA. ALCAN. ***Mossend Yard, 26th October 2001***

As the same batch as **Plate 106,** wagon No. BAHS 55538 has the 'ALCAN' logo painted in blue on the side of the tanks. The GLW was 45T and a tare weight of 13.00T.

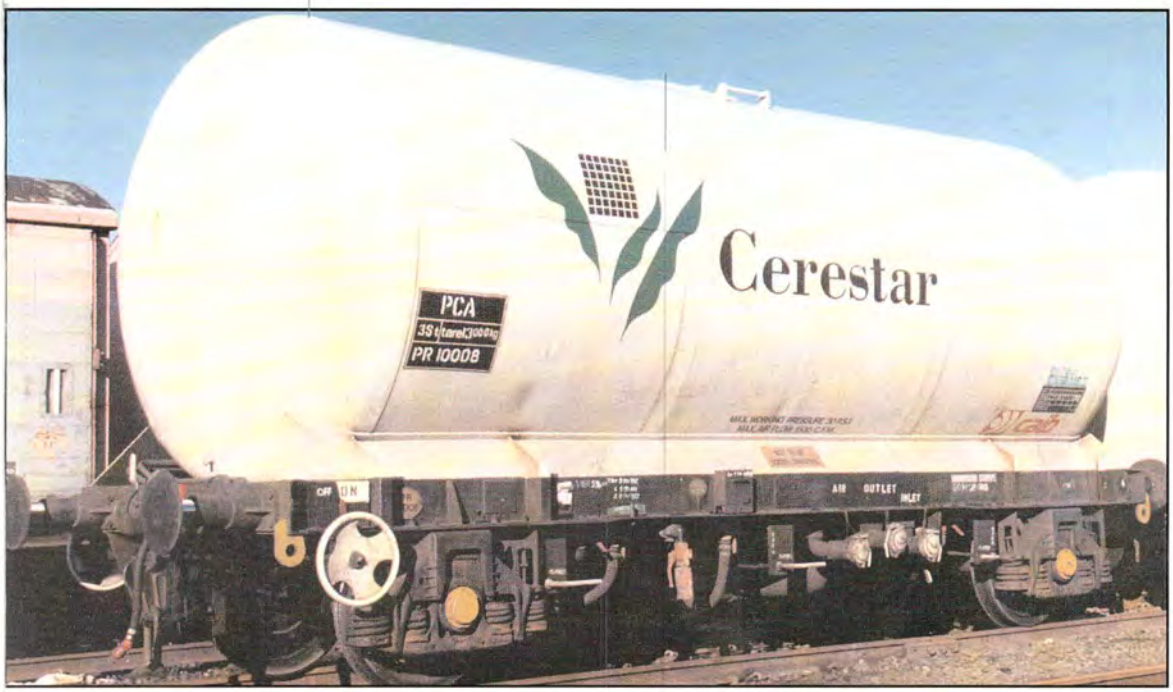


Plate 108. PCA. Cerestar. ***Mossend Yard, 5th June 1995***

Wagon No. PR 10008 is one of nineteen built under design codes PC015A/E/F, PR10008 being code PC015F, by Procor of Wakefield in 1976. They were hired to Cerestar for the conveyance of powdered soap but are now used for starch traffic. They are fitted with BSC Friction Pedestal suspension. Note similarity to PCA 9484 in **Plate 96.**

Plate 109. CSA EWS. ***Mossend Yard, 8th October 2002***

Wagon No. 876057 was originally built in 1984-85 by Procor as a PCA to design code PC015A within the number series 10050-10064 for Rugby Cement. They were bought by EWS and eight of them converted to CSA wagons under design code CS003A by Wabtec at Doncaster in 1999 for the conveyance of Quicklime from Buxton to Fifoots Point for power station use. It's original identity before overhaul was RC 10058.

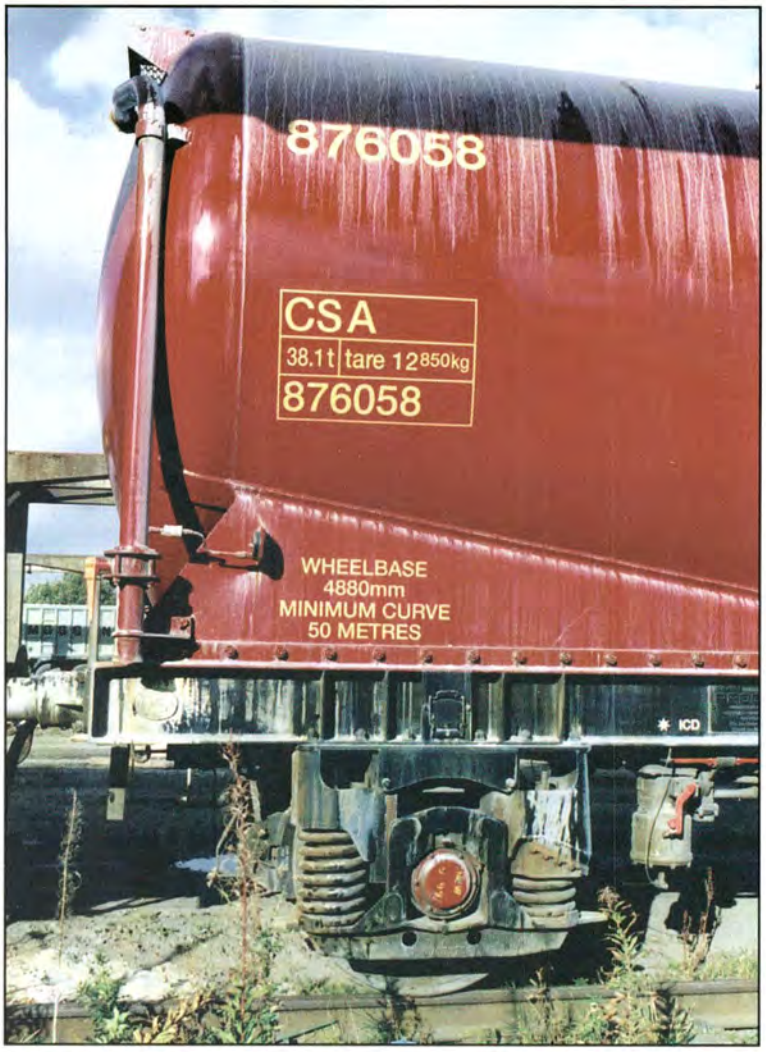


Plate 110. CSA EWS.

Mossend Yard, 8th October 2002

Wagon No. 876058 is from the same batch as wagon No. 876057 in **Plate 109** being converted to a CSA in 1999 at Wabtec Doncaster. They are seen in P & D Stirling's yard on trial with powdered lime traffic. It was not a success and the wagons are now in store. They still retained their Gloucester Floating Axle suspension and roller bearings. This end view shows in detail the suspension as well as the air distributor and the tank air inlet pipe. It is interesting to note that the GLW and Tare weights have both been reduced in the conversion and also shown in the data panel in both tons and kgs. Originally built as PCA RC 10054. The remaining seven unconverted PCA's remain stored at Barrington Cement Works near Cambridge. These are also owned by EWS.

Plate 111. CSA EWS. (Below)

Mossend Yard, 8th October 2002

In this view of wagon No. 876058 we see the bottom discharge pipework and valves together on the solebar, the instructions showing the open and close positions of those valves, and the method of retention of the pipe end covers to the discharge valves by quick release clamps.

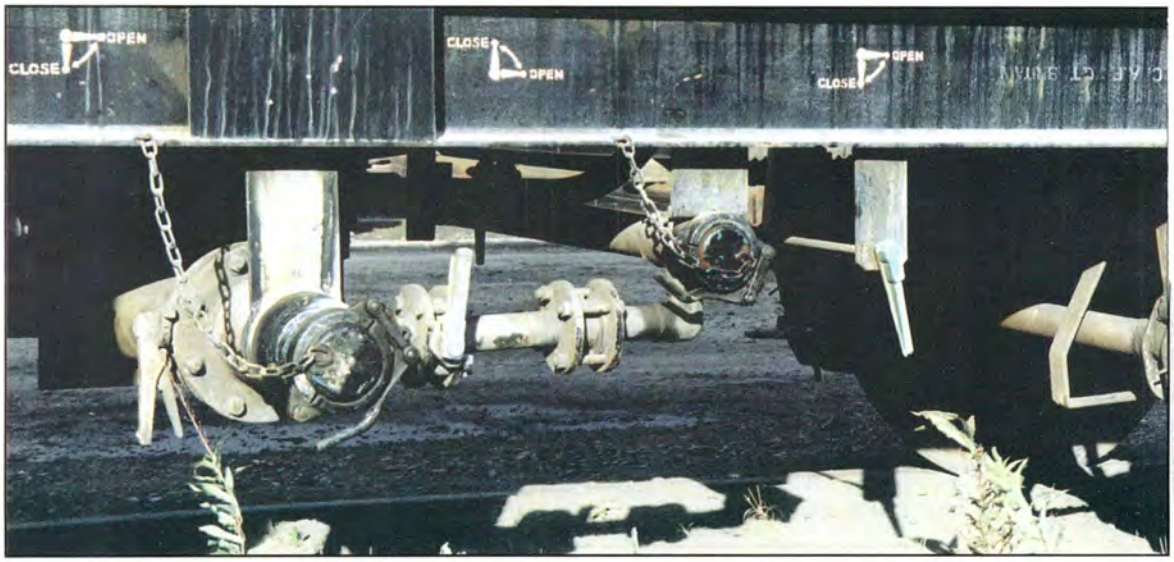
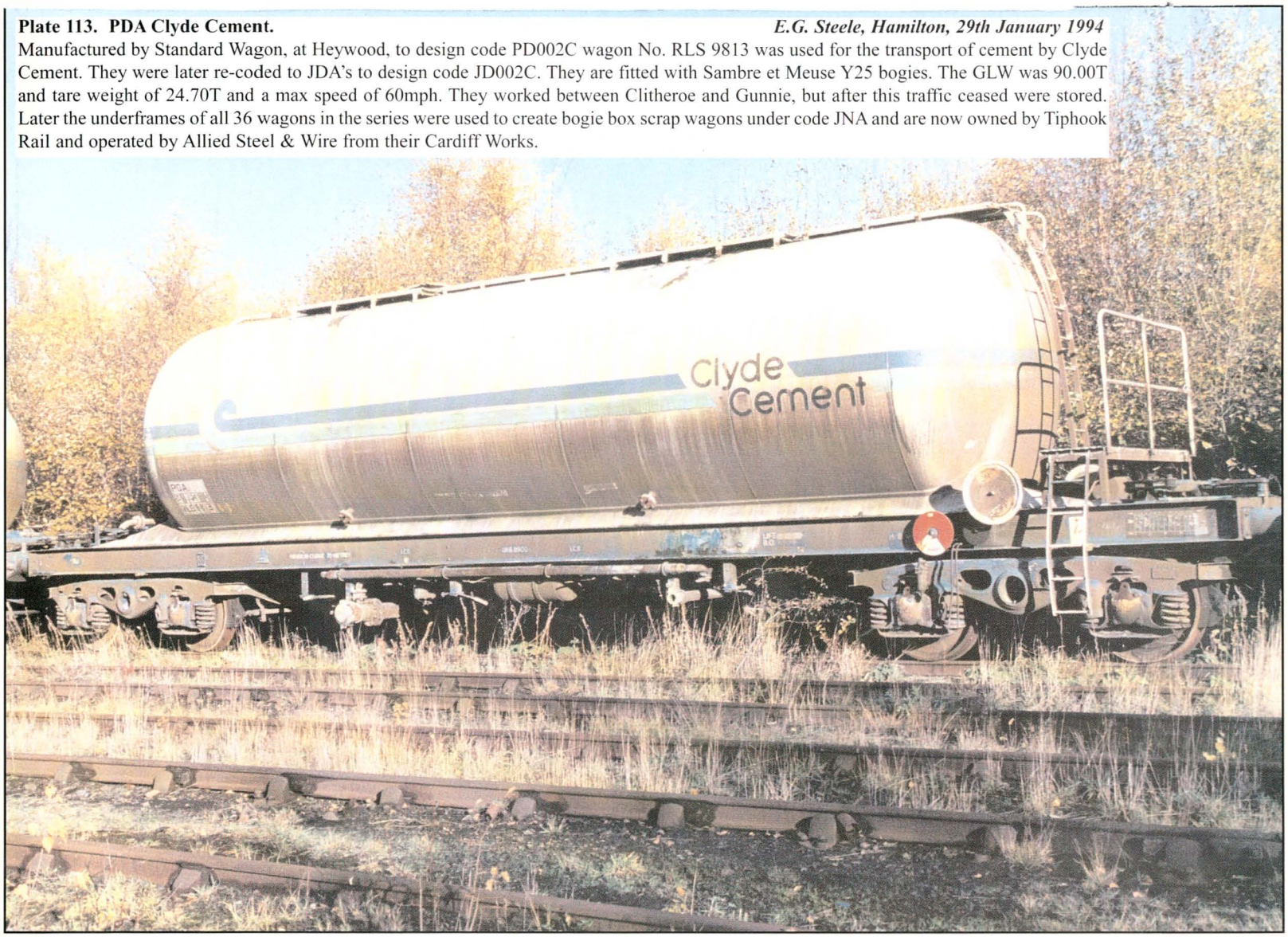


Plate 112. JCA CROXTON & GARRY. ***Mossend Yard, 4th September 1997***

Seen awaiting repair in Mossend Yard is wagon No. CG 9514, a bogie twin - tank slurry wagon. This wagon was originally built by Metro-Cammell, of Birmingham in 1971-72 to design code PD001A for APCM (Blue Circle Cement) for powdered cement traffic. However, the design was not a success and after several derailments most were stored at Ferriby. Some were retrived for traffic for the new Sizewell 'C' Nuclear Power Station. Seven wagons from batch APCM 9500-9549 were sold to Croxton & Garry for Calcium Carbonate slurry traffic to/from Sittingbourne to Scotland. All wagons later became JCA's to design code JC001A and most wagons have now been scrapped.

Plate 113. PDA Clyde Cement. *E.G. Steele, Hamilton, 29th January 1994*

Manufactured by Standard Wagon, at Heywood, to design code PD002C wagon No. RLS 9813 was used for the transport of cement by Clyde Cement. They were later re-coded to JDA's to design code JD002C. They are fitted with Sambre et Meuse Y25 bogies. The GLW was 90.00T and tare weight of 24.70T and a max speed of 60mph. They worked between Clitheroe and Gunnie, but after this traffic ceased were stored. Later the underframes of all 36 wagons in the series were used to create bogie box scrap wagons under code JNA and are now owned by Tiphook Rail and operated by Allied Steel & Wire from their Cardiff Works.



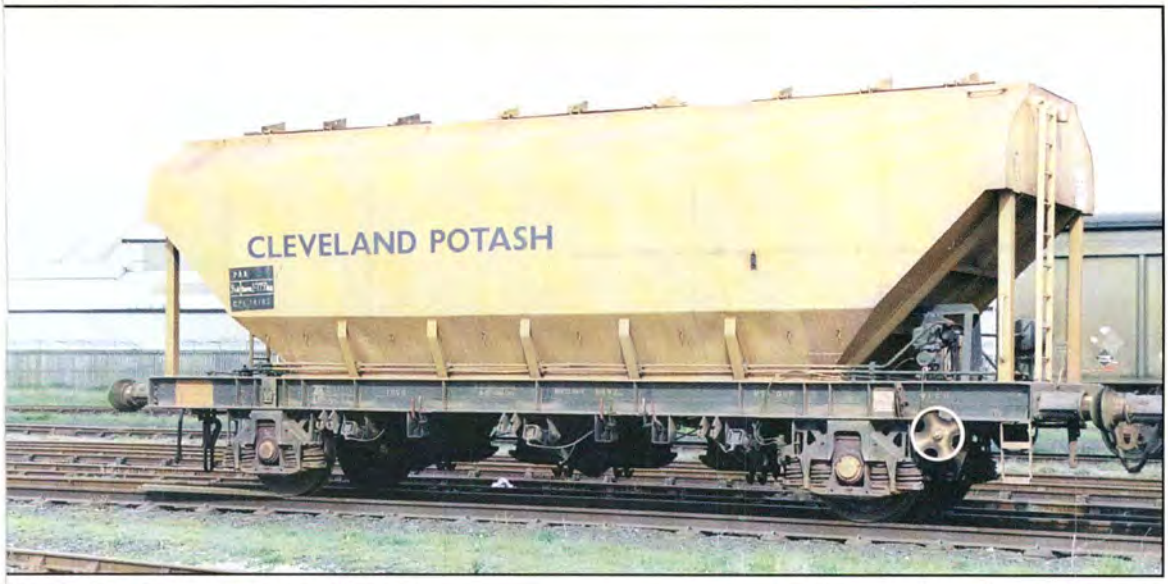


Plate 114. PAA. CLEVELAND POTASH. ***Middlesborough Goods, 19th May 2002***

Built originally as PGA Grain/Aggregrate Hoppers by Procor, at Wakefield in 1975 and hired to ICI, who later owned them. They were subsequently rebuilt as covered hoppers by the fitting of weather tight top doors and uprated to 35T to design code PA009B and by 1987 transferred to Potash traffic. Wagon No. CPL14165 is seen in Cleveland Potash livery. They are fitted with BSC Friction Pedestal suspension and each have a wheelbase of 20ft 0in. The wagons were later altered to design code PA009D.

Plate 115. PAA. CLEVELAND POTASH. ***Middlesborough Goods, 19th May 2002***

Wagon No. CPL 14167 in this view shows the end access ladder together with the operating equipment for the three sets of pneumatic operated bottom doors. Note the last two numbers of the wagon number stencilled on the ends. Since the introduction of new bogie hoppers some of these wagons have been scrapped. The remaining wagons operate between Boulby Mine and either Tees Dock or Middlesborough Goods.

Plate 116. PAA. CLEVELAND POTASH. ***Middlesborough Goods, 19th May 200***

In this view wagon No. CPL 14169 is shown painted in the later green livery with the 'Cleveland Potash Limited' logo on the side painted in white. It also shows the opposite side of the vehicle to the later two plates. Unusually it carries two data panels. Note also the tie down cleats left over from the days as an open hopper and the use of tarpaulin sheets.

Plate 117. JAA. (Ex PBA) CLEVELAND POTASH. ***Tees Dock, 19th May 200***

Built by Charles Roberts at Wakefield in 1974 to design code PB001B, and coded PBA, these 60ft 0in. long top loading hoppers are of all welded construction. They have since been re-coded under design code JA001B as JAA's. They are fitted with 4 sets of bottom doors and run on Gloucester three piece Fastfreight bogies. Wagon No. STS 11419 is painted in mid green livery, with the 'Clevenland Potash Limited' and logo painted in white on the side. These wagons have earned the nickname 'Jolly Green Giants'. Like the PAA's some of these wagons have now been scrapped.

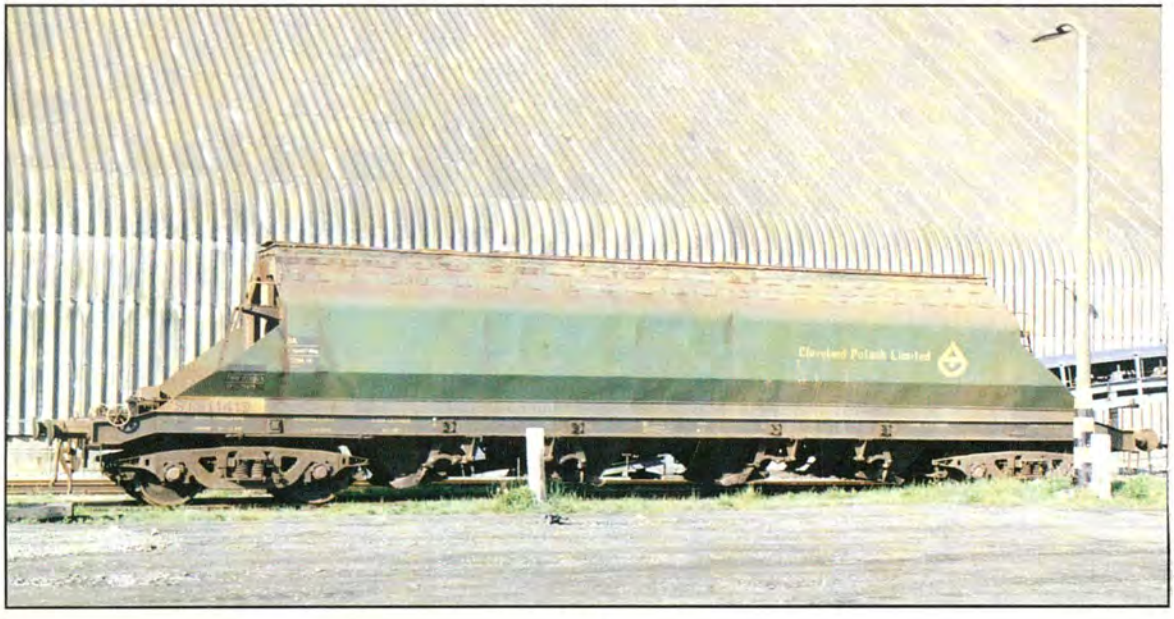


Plate 118. JGA CLEVELAND POTASH. ***Cobra Railfreight, Middlesborough, 19th May 2002***

Built by Arbel-Fauvet in France in 1998 to design code JG015A in number series 19250 - 19280 for NACCO and leased to Cleveland Potash. They run on Y25 bogies. Wagon No. NACO 19270 is seen in plain all over grey livery with just the 'NACCO' logo on the red and blue background. This design of wagon replaces the older PAA and JAA wagons.

Plate 119. JGA CLEVELAND POTASH. ***Cobra Railfreight, Middlesborough, 19th May 2002***

Wagon No. NACO 19254 is a wagon from the same batch as **Plate 118** and painted in the same livery but has the name 'Cleveland Potash' painted in blue on the hopper sides. These wagons bear a passing resemblance to some of the covered hoppers seen in Vol. 1.

Plate 120. CEA EWS. ***Mossend Yard, 17th February 200***

Although normally used for the conveyance of lime traffic, as described in Volume One, this particular wagon No 361087 has been used on Fly Ash traffic from Longannet Power Station to Westbury for Blue Circle Cement hence the inclusion in powder tanks in this volume. The wagon was originally a HBA open coal hopper wagon built in 1976-79 a BR Shildon Lot No. 3885 design code HE001A. It was resprung with Bruninghaus springs and re-coded HEA. It was converted in 1996 at R.F.S Doncaster to CEA for Loadhaul to design code CE001A.

Plate 121. CEA EWS. ***Mossend Yard, 25th January 200***

Again a further wagon No. 361896 from the same batch as **Plate 120** above that has been noted on the conveyance o Fly Ash. This, together with the wagon above, was in the second batch to be converted at R.F.S. Doncaster and appeared in EWS livery. Note the black rubber covering over the end of the wagon and the top of the steps.

Plate No 123 ***Coatbridge, c. February 1995***

Class 37 No. 37156 in Transrail livery is seen in charge of the booked train reporting No. 6T10 from Cameron Bridge and Thornton Yard to Mossend Yard. It is conveying Carbon Dioxide in the rear wagons and the first two wagons behind the engine, empty Cerestar PCA's returning to Manchester for filling with starch powder by Cerestar. These will be included in the afternoon Enterprise Working from Mossend Yard to Warrington.

Back Cover:

Top Left. ***Mossend Yard, 31st March 2001***

Wagon No. 87 4746 036 was originally built as an IUA wagon by Arbel-Fauvet of France to design code IUE545(Ex IPE545). It has since been re-coded to an IUB and used for the conveyance of steel strip and coil on various workings between here and Europe. It is fitted with Y25CSS bogies.

Top Right. ***Mossend Yard, 17th March 2002***

Timber carrying OTA, wagon No. 112332, started life as a OCA 45T Open Goods Wagon, under design code OT001A/B/C at BR Shildon Works in 1981-82, Lot No. 4014. They are use mainly in the Highlands for the conveyance of timber traffic to paper mills for processing into paper.

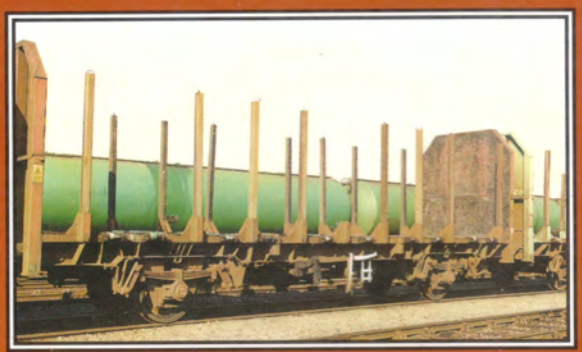
Bottom Left. ***Burton on Trent, 14th February 2002***

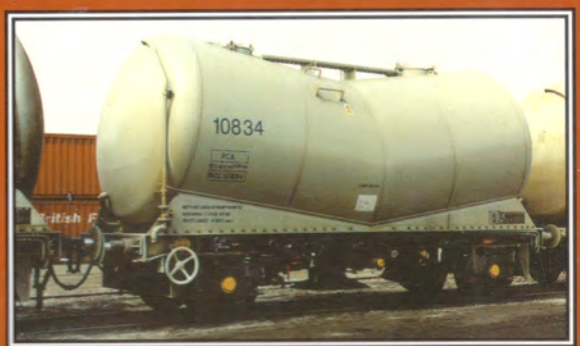
Three MHA spoil wagons flanked on either side by two newly painted 'Railtrack' PNA's on a spoil train passing through Burton on Trent from Bescot Yard. Most of these wagons have been coverted from redundant HAA MGR chassis.

Bottom Right. ***Mossend Yard, c. 1999***

PCA wagon No. 10834 was one of a batch built in 1981 by BREL Ashford Works to design code PC009F for the cement trade. Fitted with Gloucester Floating Pedestal suspension, giving them a top speed of 60mph, they were normally used on cement traffic between Eastgate, Northfleet and Oxwellmains but are now in use for Fly Ash, a by product of the coal fired Power Station at Longannet.

BRITISH RAILWAY AIR BRAKED STOCK Volume 2





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